

Pandemiler



Önder Ergönül, MD, MPH

SASDER, Antalya

2 Kasım 2023



Yüzyılın Başında Görülen Hastalıklar

İspanyol Gribi (H1N1): 20 yy **ilk pandemi**

Lepra (cüzzam)

Trahom

Veba

Çiçek

Sıtma

Tifo

Tifus

Kolera

Kuduz

Difteri

Frengi (sifiliz)

Tüberküloz

HIV/AIDS

23 Nisan 1920 TBMM Açılırken Durum

“Balkan, Dünya ve Kurtuluş savaşlarından sonra ülke harap. Para, malzeme, insangücü yok, ama borç, bulaşıcı hastalık çok.”

“Üç milyon insanımız trahomlu. Sıtma, tifüs, verem, frengi salgın halde. Bit ciddi sorun. Nüfusumuzun yarısı hasta. Bebek ölümleri %60. Sığır vebası hayvanlarımızı öldürüyor.”

“Nüfusumuzun % 80’i kırsal kesimde; bunun önemli bölümü göçebe. Elektrik yalnız İstanbul’da ve İzmir’in bazı semtlerinde var.”



1923-1946: Cumhuriyet Erken Dönem

Dr. Refik Saydam 10 Ekim 1923, Cumhuriyetin ilk sağlık bakanı, 15 yıl görevde kaldı.

1925 yılında hazırlanan ilk çalışma planında açıklanan hedefler:

- 1- Devlet sağlık örgütünü genişletmek
- 2- Hekim, sağlık memuru ve ebe yetiştirmek
- 3- Numune hastaneleri ile doğum ve çocuk bakımevleri açmak
- 4- Sıtma, verem, trahom, frengi ve kuduz gibi önemli hastalıklarla savaşmak
- 5- Sağlıkla ilgili yasaları yapmak
- 6- Sağlık ve sosyal yardım örgütünü köye dek götürmek
- 7- Merkez Hıfzıssıhha Enstitüsü ve Hıfzıssıhha Okulu kurmak.



Developments in Emerging and Existing Infectious Diseases
Series Editors: Önder Ergönül and Füsün Can

1

EMERGING INFECTIOUS DISEASES

Clinical Case Studies



Edited by

Önder Ergönül, Füsün Can,
Lawrence Madoff, and Murat Akova



BMA

BMA Medical Book Awards 2015

First Prize

Public health

Presented to

Onder Ergonul, Fusun Can, Lawrence Madoff and
Murat Akova and Elsevier/Academic Press

for

Emerging Infectious Diseases: Clinical Case Studies

Professor Sir Al Aynsley-Green
President

Dr Mark Porter
BMA council chair



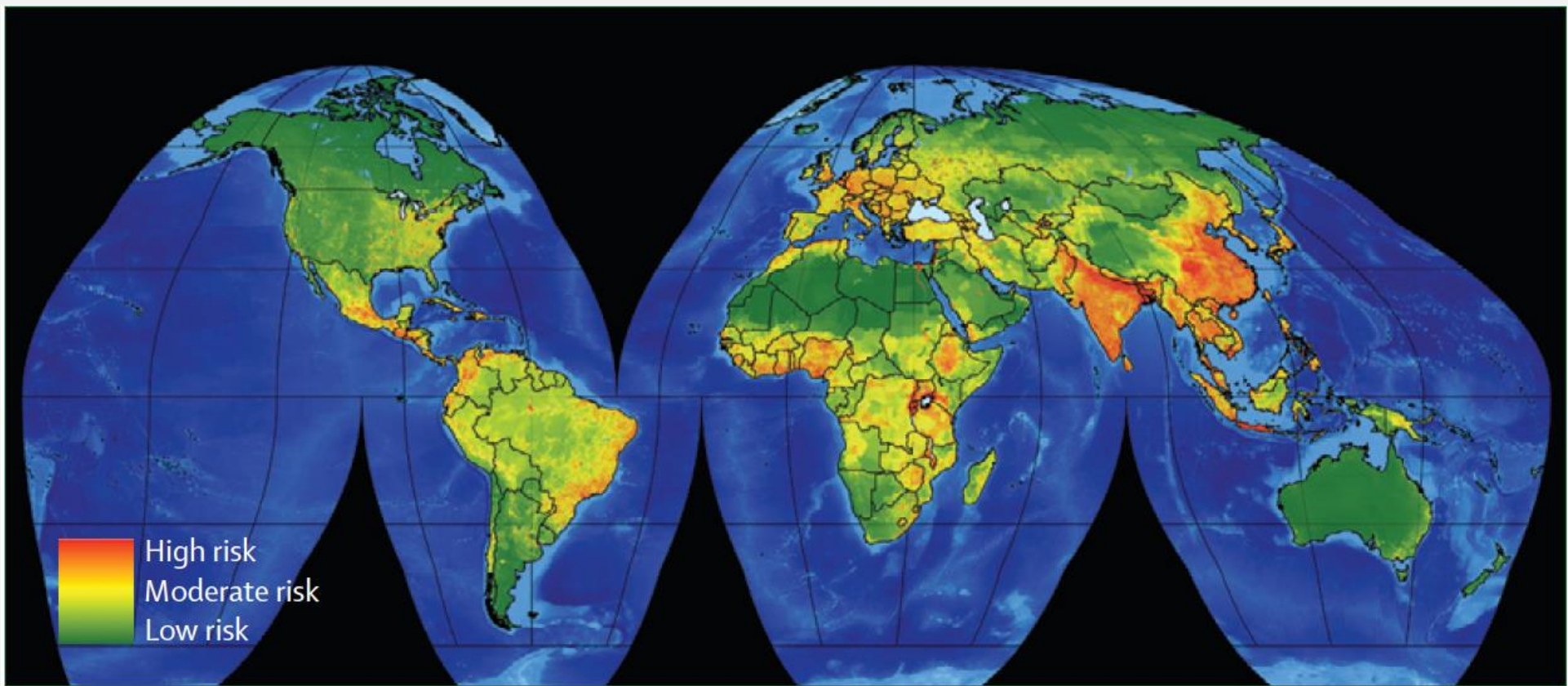


Figure 1: Global hotspots for emerging infectious diseases that originate in wildlife

A database of all known emerging infectious diseases³ since 1940 was used to identify the most likely origins of each separate emergence event. Presence or absence of infections emerging from wildlife was analysed with logistic regression against a series of known drivers, including human population density, change in human population density, and wildlife diversity (mammalian species richness), gridded at 1 km² resolution. The global distribution of model outputs gives a measure of the likelihood of a region to generate a new zoonotic emerging infectious disease that originates in wildlife. Because previous pandemics have mainly originated in wildlife, these maps identify hotspots where the next pandemic is most likely to originate.



1973'den itibaren Yeni Virüsler

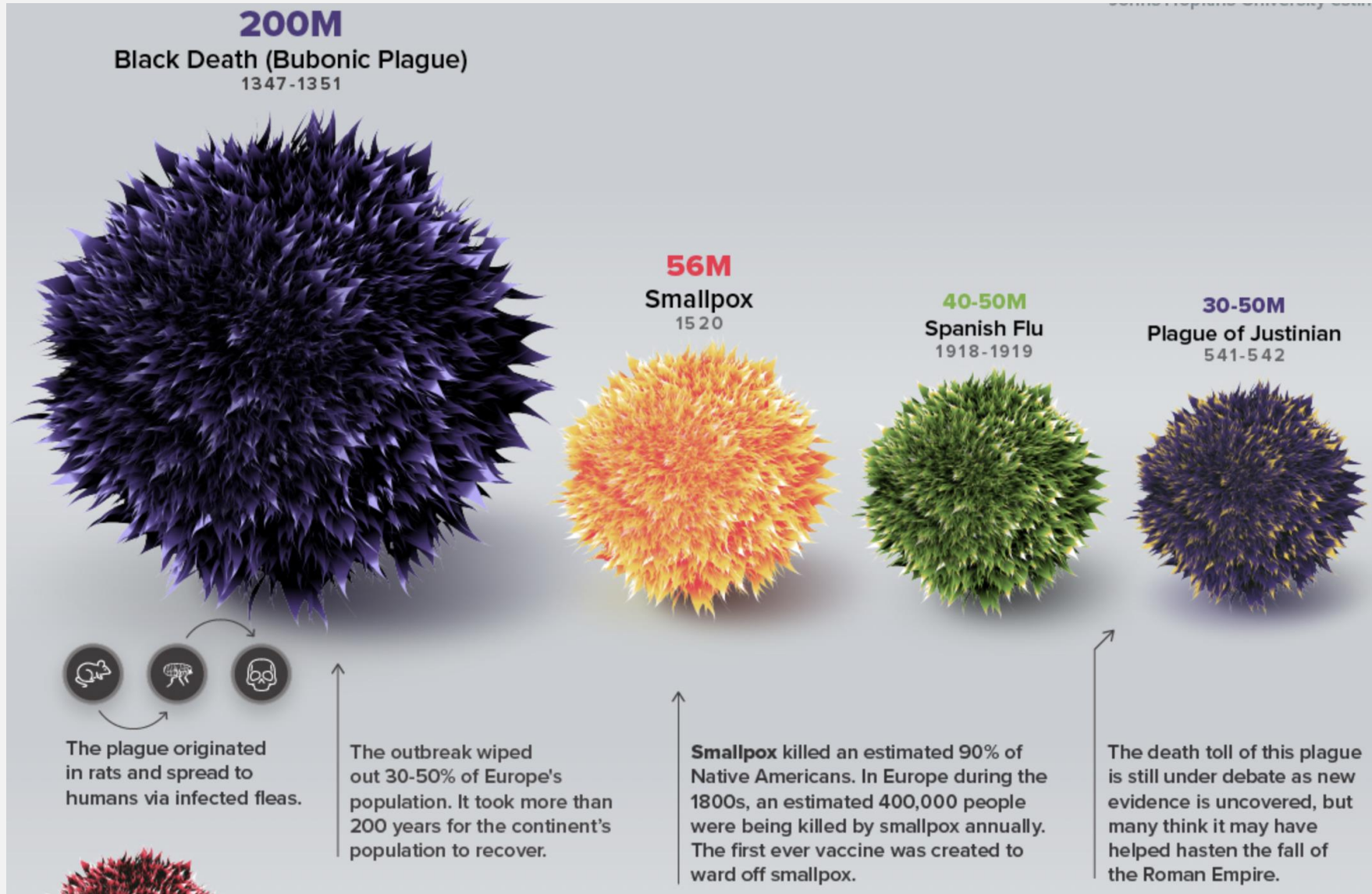
1973	Rotavirus
1976	Ebola virus
1977	Hanta virus
1983	HIV
1988	Hepatit E
1989	Hepatit C
1990	Guanarito

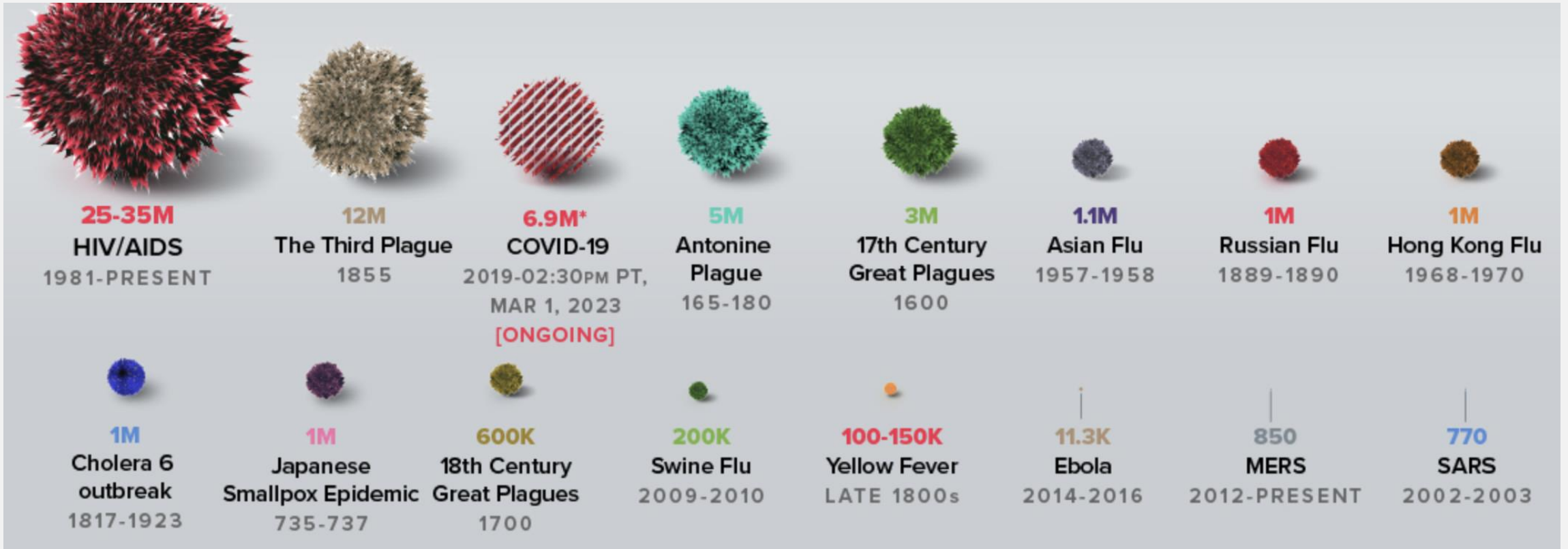
1993	Sin Nombre
1994	Sabia
1994	Hendra
1995	Hepatit G
1995	Herpes 8
1997	H5N1
1999	Nipah

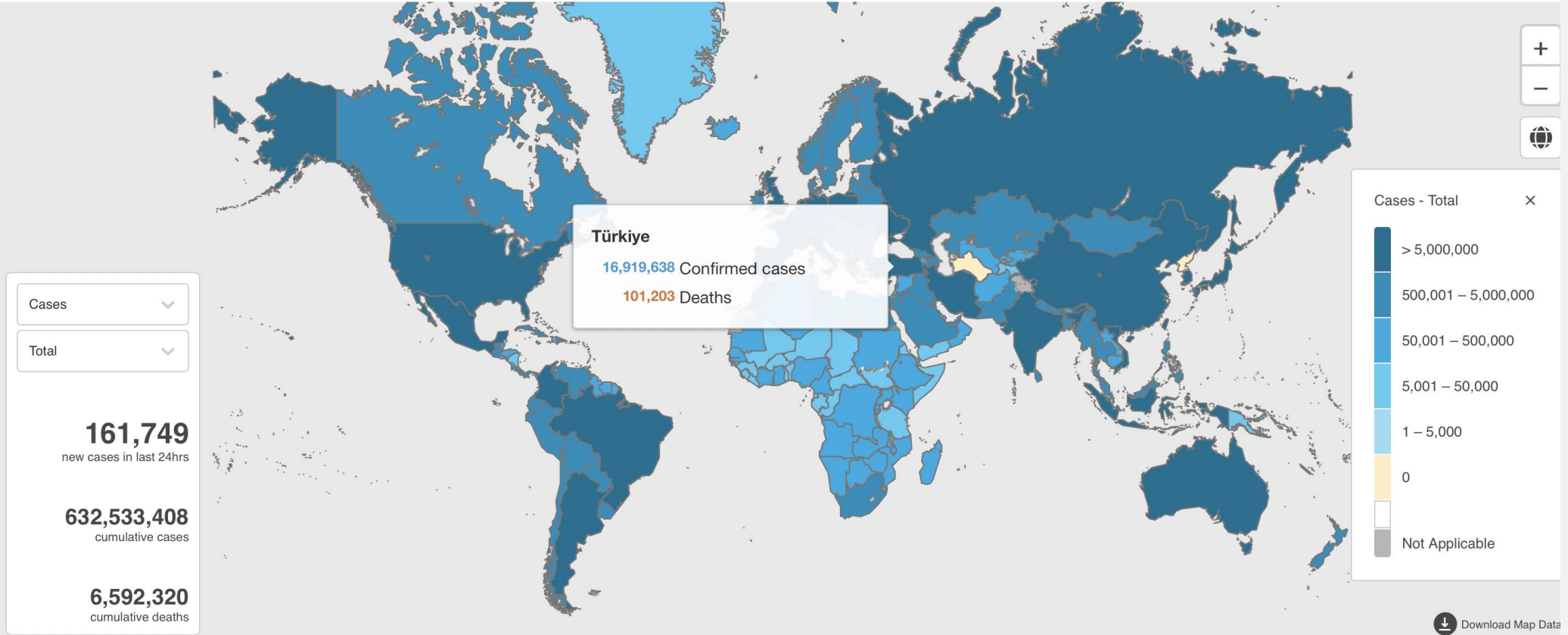


2000'den itibaren Yeni Virüsler

2001	Metapneumovirus
2003	Monkeypox
2003	SARS-CoV
2004	Bocavirus
2008	Merkelcell polyoma virus
2009	Influenza H1N1
2012	MERS-CoV
2013	H7N9
2015	H5N6
2019	SARS-CoV-2



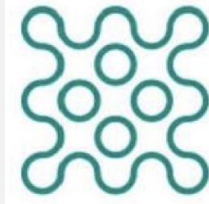




Globally, as of 6:19pm CET, 15 November 2022, there have been 632,533,408 confirmed cases of COVID-19, including 6,592,320 deaths, reported to WHO. As of 8 November 2022, a total of



17 Şubat 2020, İstanbul



EITaF

EMERGING
INFECTIONS
TASK FORCE

European Society of Clinical Microbiology and Infectious Diseases

Narrative review

COVID-19, SARS and MERS: are they closely related?

N. Petrosillo ^{1,*}, G. Viceconte ², O. Ergonul ^{3,4}, G. Ippolito ¹, E. Petersen ^{5,6,7}

Clinical Microbiology and Infection 26 (2020) 729–734

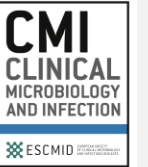


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Contents lists available at ScienceDirect

Clinical Microbiology and Infection

journal homepage: www.clinicalmicrobiologyandinfection.com





Kuruluş Süreci



9 Mart 2020

Sunum

Önder Ergönül tarafından **İş Bankası'na** COVID-19 sunumu yapıldı.

Nisan 2020

Merkez Fikri

BSL-3 ve Mikrobiyoloji laboratuvarının desteklenerek uluslararası alanda güçlü bir merkez haline gelmesi

15 Mayıs 2020

Bütçe

Merkez bütçesi için İş Bankası'ndan sözlü onay alındı.



Kuruluş Süreci



11 Ağustos 2020

Basın Toplantısı

İş Kulelerinde Koç Üniversitesi ve İş Bankası'nın katılımıyla basın toplantısı gerçekleştirildi.

05 Kasım 2020

Kuruluş İzni

YÖK merkez için kuruluş izni verdi.



20 Aralık 2020

İlan

Resmi gazetede merkezin kuruluş ilanı yayınlandı.



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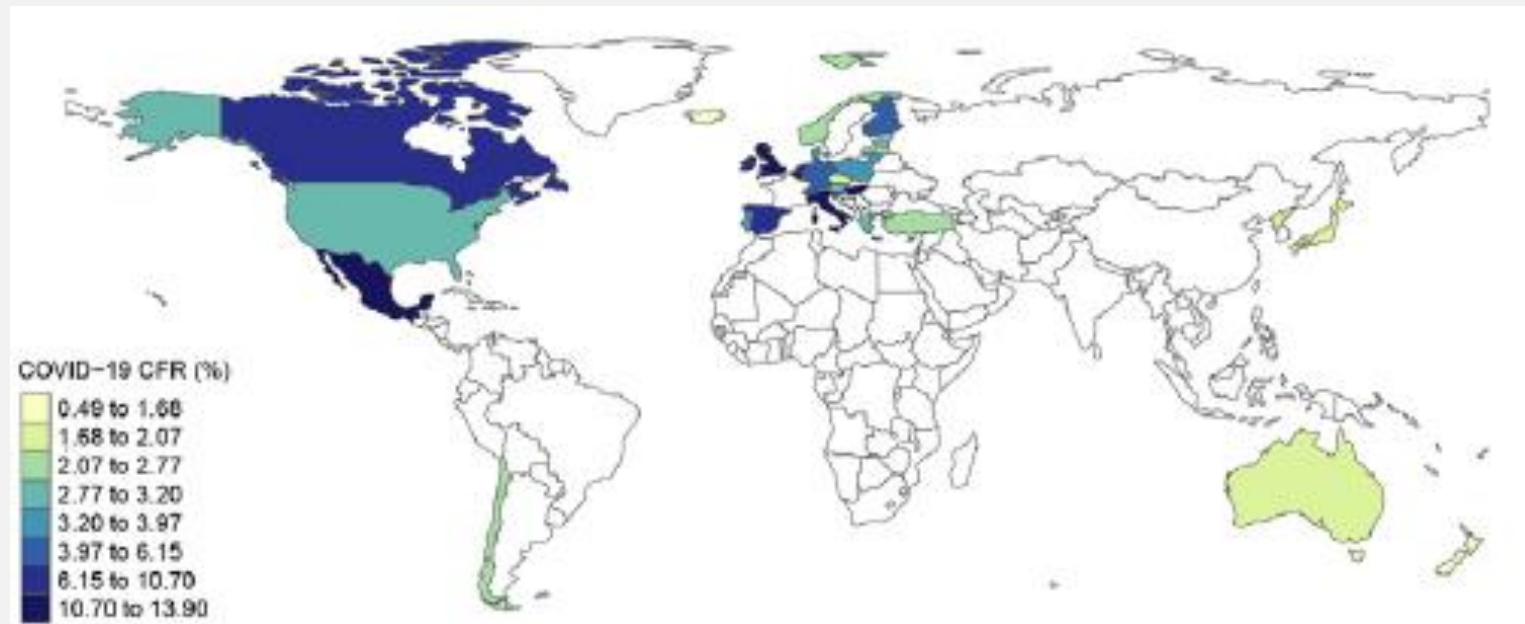
Clinical Microbiology and Infection

journal homepage: www.clinicalmicrobiologyandinfection.com

Original article

National case fatality rates of the COVID-19 pandemic

Önder Ergönül^{1,2,3,*}, Merve Akyol⁴, Cem Tanrıöver⁴, Henning Tiemeier⁵,
Eskild Petersen^{3,6}, Nicola Petrosillo^{3,7}, Mehmet Gönen^{2,4,8}





Pandeminin Başında Ölüm Nedenleri

Table 1

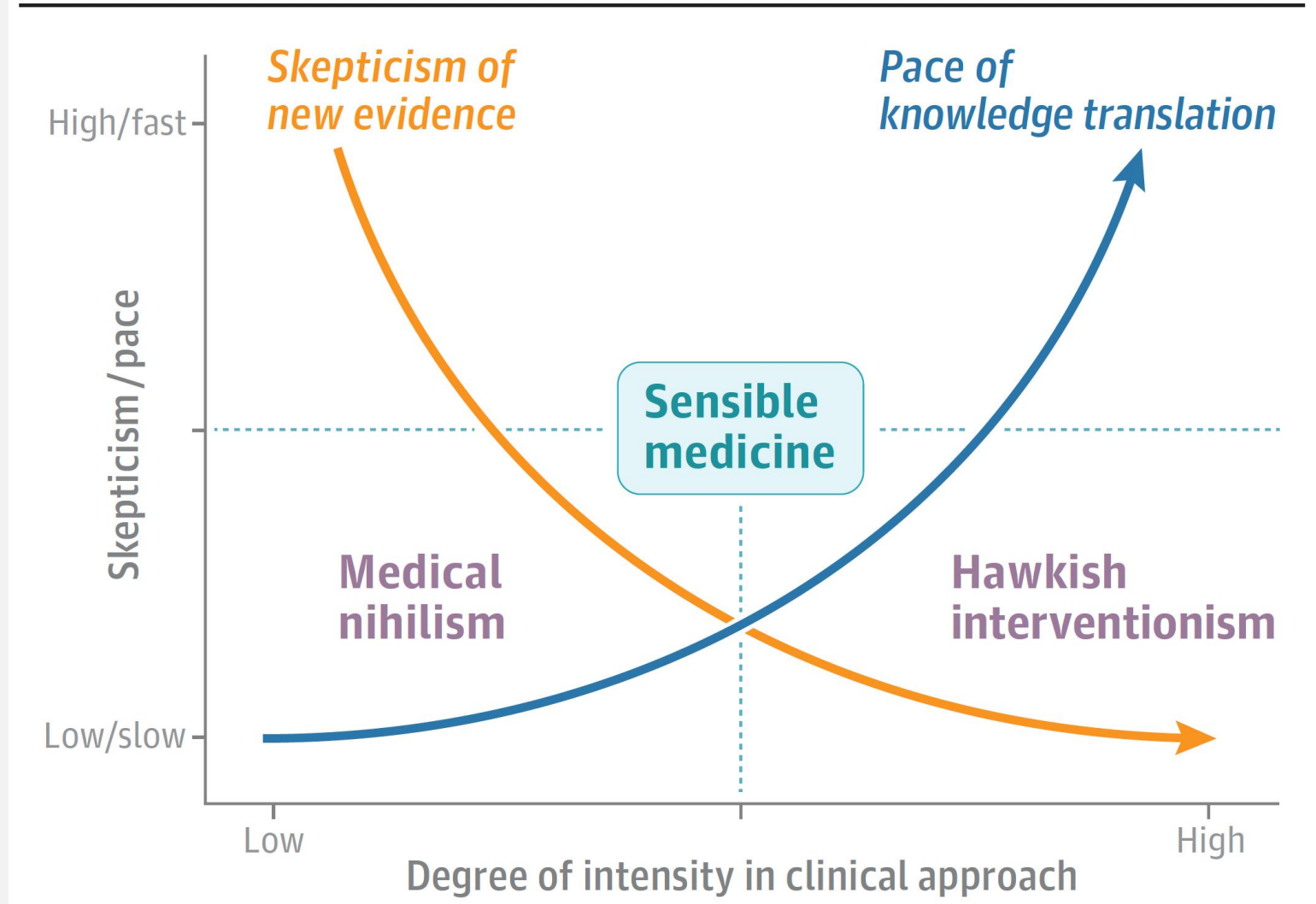
Analysis for the health indicators and covariates of national case fatality rates (CFRs) adjusted by duration since first death (as of 18th August 2020)

	Adjusted standardized coefficient	Adjusted 95% confidence interval	Adjusted p value
Risk factors:			
Obesity in ages 18+ (%)	2.42	[0.38, 4.46]	0.021
Male population (%)	-1.37	[-3.41, 0.67]	0.180
HIV/AIDS prevalence in ages 15–49 (%)	1.20	[-0.84, 3.24]	0.239
Raised blood pressure in ages 18+ (%)	0.98	[-1.06, 3.02]	0.333
Median age (years)	0.96	[-1.08, 3.00]	0.345
Tobacco smoking in ages 15+ (%)	0.51	[-1.53, 2.55]	0.616
Tuberculosis incidence (per 1000 people)	0.44	[-1.60, 2.48]	0.660
All-cancer prevalence in ages 15+ (%)	0.41	[-1.63, 2.45]	0.682
Diabetes prevalence in ages 20–79 (%)	-0.31	[-2.35, 1.73]	0.760
Health system			
Number of hospital beds (per 1000 people)	-1.78	[-3.82, 0.26]	0.085
Number of tests (per 1000 people)	-1.11	[-3.15, 0.92]	0.274
Number of nurses and midwives (per 1000 people)	-0.94	[-2.98, 1.10]	0.356
Number of doctors (per 1000 people)	-0.03	[-2.07, 2.01]	0.978
Propensity covariates:			
Rural population (%)	0.71	[-1.33, 2.75]	0.485
Health spending (US dollars per capita)	-0.44	[-2.48, 1.60]	0.662



Aldırmazlık ve Aşırı Duyarlılık

Figure. Conceptual Model for Sensible Medicine



Verilerden Bilime Giden Yolda **Pandemi Farkı**





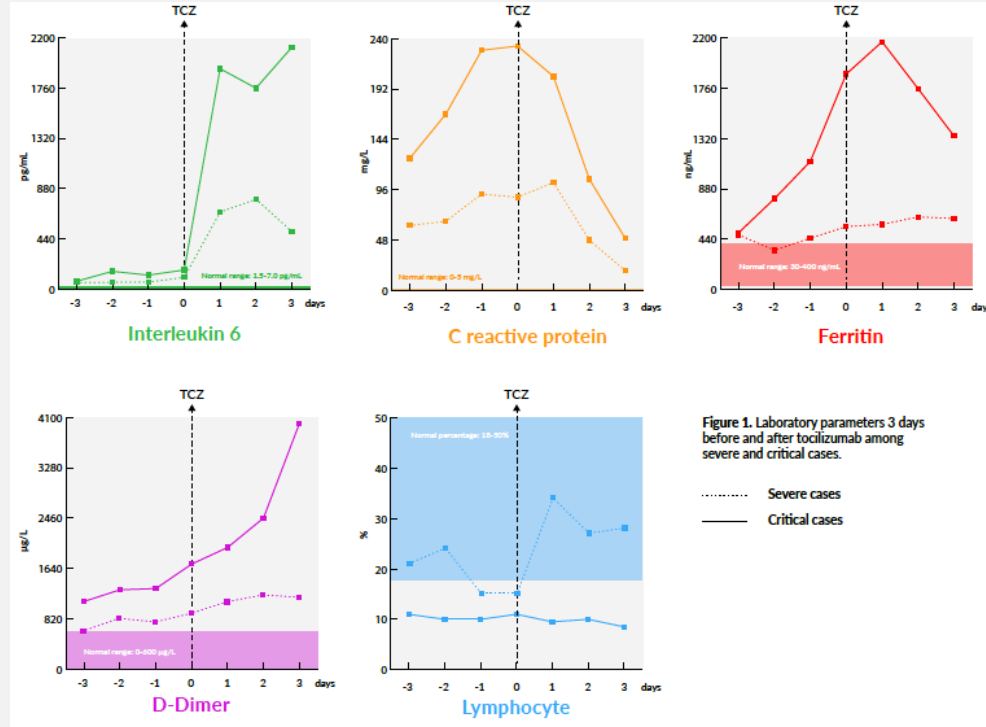
Contents lists available at ScienceDirect
International Journal of Infectious Diseases

journal homepage: www.elsevier.com/locate/ijid



Appropriate use of tocilizumab in COVID-19 infection

Şiran Keske^a, Süda Tekin^b, Bilgin Sait^c, Pelin İrkören^b, Mahir Kapmaz^b, Cansu Çimen^a, Semra Uğur^d, İrfan Çelebi^h, Veli Oğuzalp Bakır^e, Erhan Palaoglu^f, Evren Şentürk^d, Benan Çağlayan^g, Nahit Çakar^d, Levent Tabak^g, Önder Ergönül^{b,*}



Tedavi stratejimizi ilk ayda oluşturduk (IJID 2020)

DSÖ bu yaklaşımı 1.5 yıl sonra onayladı

11 February 2022.



[Home](#) / [News](#) / [item](#) / WHO prequalifies first monoclonal antibody - tocilizumab – to treat COVID-19

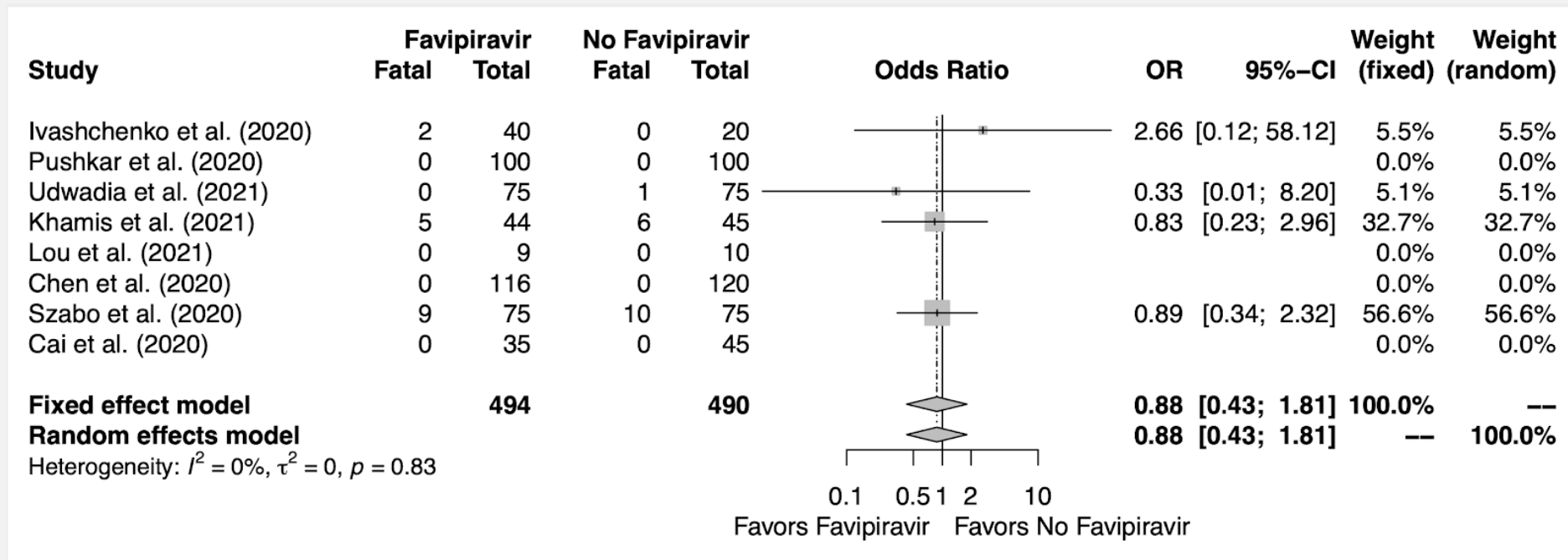
WHO prequalifies first monoclonal antibody - tocilizumab – to treat COVID-19

11 February 2022 | Departmental news | Reading time:



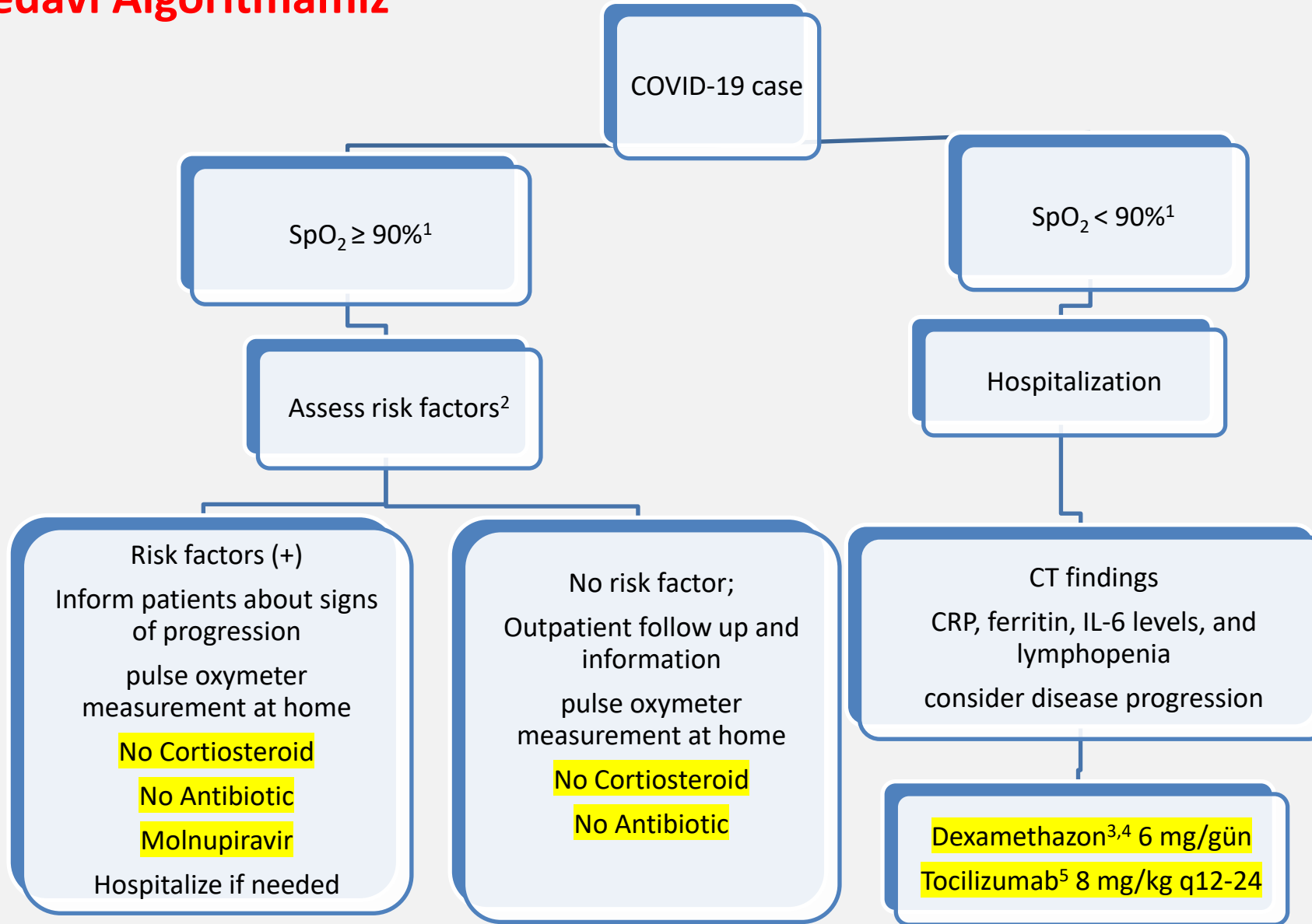
Effectiveness of favipiravir in COVID-19: a live systematic review

Batu Özlüßen¹ · Şima Kozan¹ · Rüştü Emre Akcan¹ · Mekselina Kalender¹ · Doğukan Yaprak¹ · İbrahim Batuhan Peltek¹ · Şıran Keske^{1,2} · Mehmet Gönen^{1,2,3} · Önder Ergönül^{1,2}



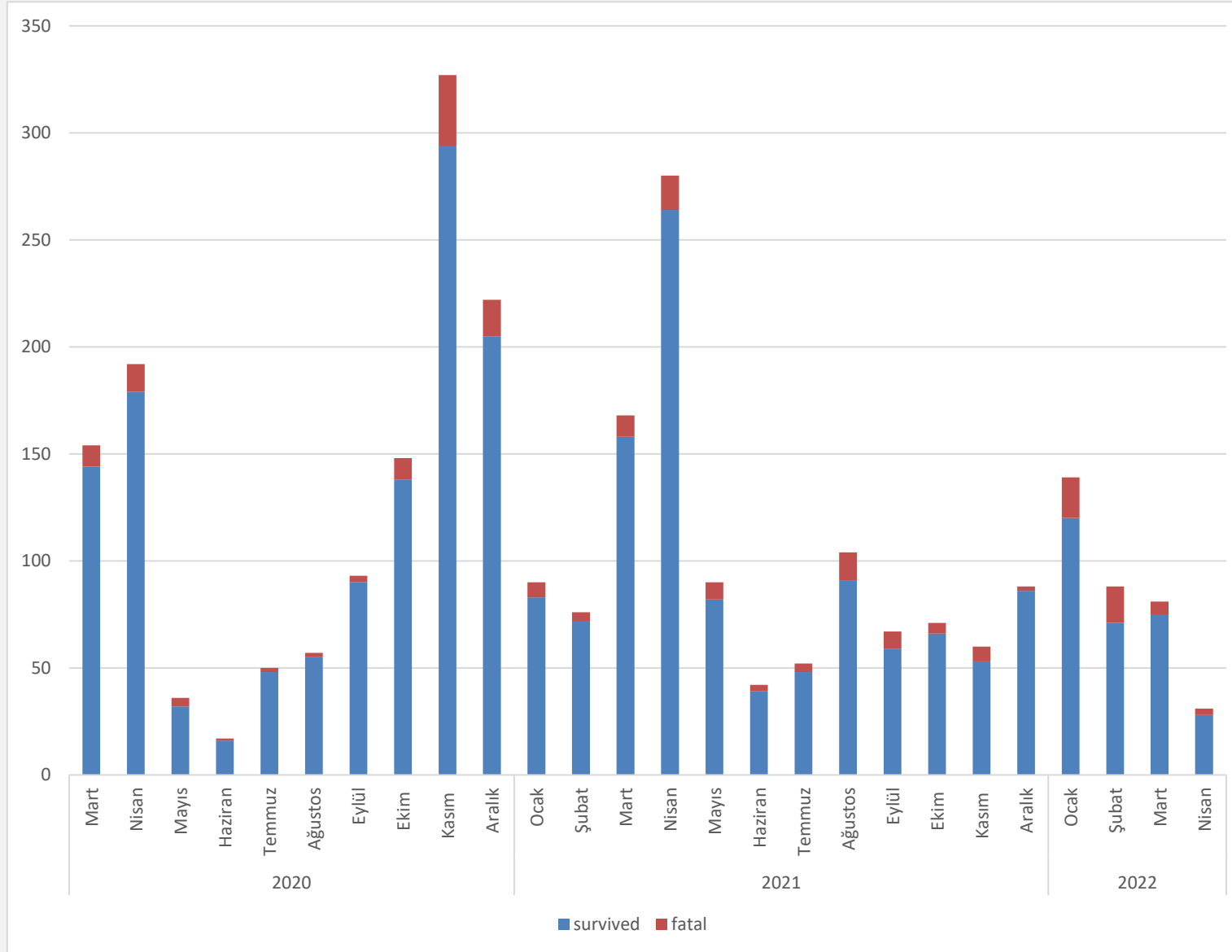


Tedavi Algoritmamız





Hastanelerimizde Durum (Nisan 2022'ye kadar)



2830 hasta

437 YB (15%)

MV: 191

230 ölüm (8%)



Brief Report

COVID-19 Severity among Healthcare Workers: Overweight Male Physicians at Risk



Bahar Madran ^{1,*} , Zeliha Akbulut ², Gözde Akbaba ¹, Emre Taş ², Tuğba Güçlüoğlu ², Özgür Şencanlı ³, İsmail Bozkurt ⁴, Şiran Keske ^{5,6} and Önder Ergönül ^{5,6} 

Table 2. Predictors of severity among healthcare workers with COVID-19 (backward selection).

	Univariate			Multivariate		
	OR	CI	<i>p</i>	OR	CI	<i>p</i>
Male gender	1.64	1.13–2.39	0.009	1.65	1.11–2.46	0.013
Age > 40 years	1.71	1.16–2.52	0.006	-	-	-
BMI > 30 kg/m ²	2	1.13–3.54	0.017	1.9	1.09–3.51	0.024
Cardiovascular diseases	2.89	1.37–6.09	0.005	-	-	-
Physician	2.54	1.49–4.33	0.001	2.56	1.45–4.52	0.001



Article

Risk Groups for SARS-CoV-2 Infection among Healthcare Workers: Community versus Hospital Transmission


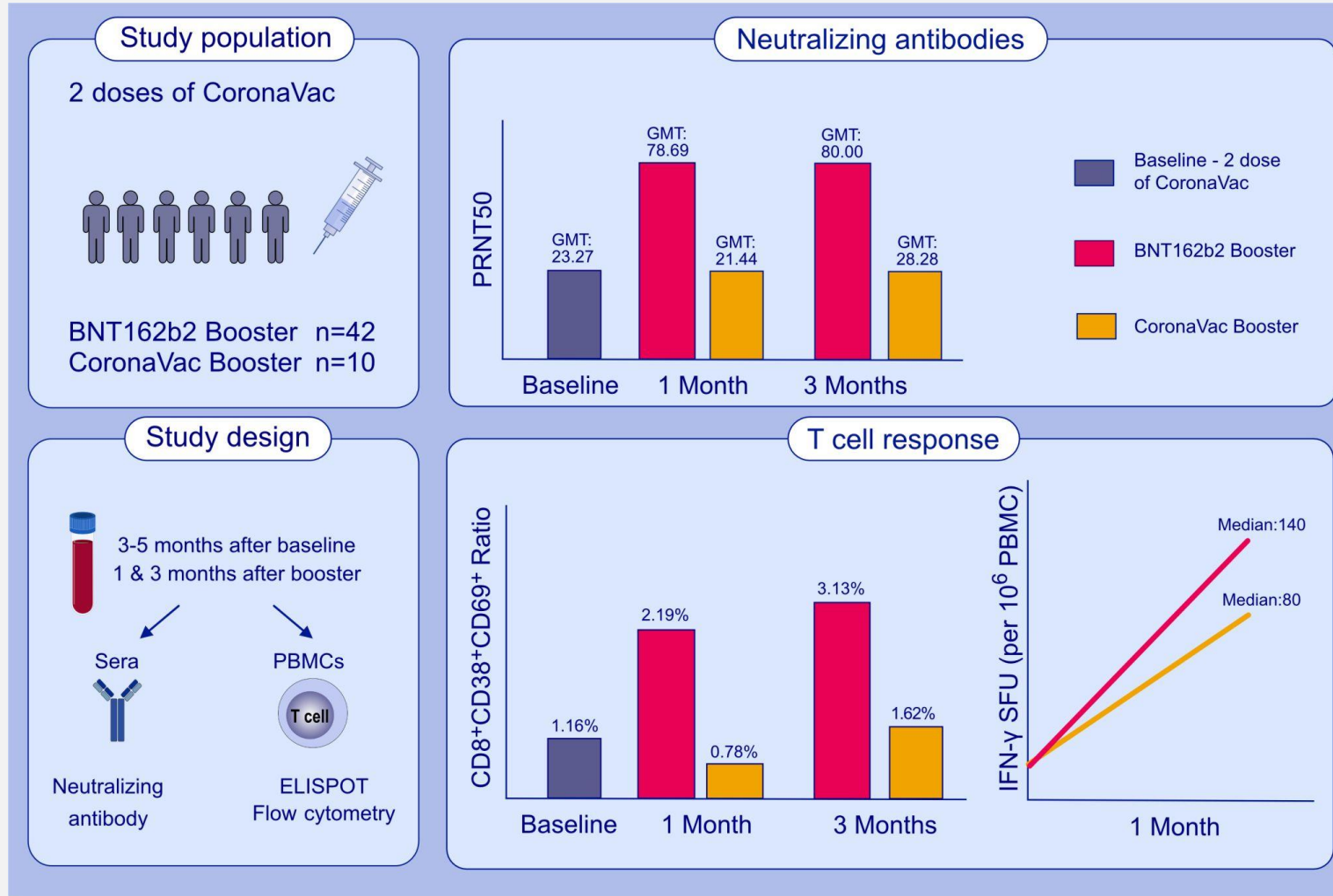
Fatihhan Pınarlık ^{1,2,3} , Zeliha Genç ⁴ , Mahir Kapmaz ⁴, Süda Tekin ^{1,4} and Önder Ergönül ^{1,3,*} 

Table 2. The predictors of SARS-CoV-2 infection among HCWs.

Risk Factors	Univariate Analysis			Multivariate Analysis		
	OR	CI	<i>p</i>	OR	CI	<i>p</i>
Janitorial Staff	1.82	1.04–3.22	0.037	2.24	1.21–4.14	0.011
Medical Secretary	4.16	2.29–7.56	<0.001	4.17	2.12–8.18	<0.001
Diagnosed Patient in Household	8.82	6.56–11.85	<0.001	8.98	6.64–12.15	<0.001
Number of Household Members >3	1.62	1.26–2.10	<0.001	1.67	1.26–2.22	<0.001



Biontech ve Sinovac Aşılarının Karşılaştırılması



Abbreviations: GMT, geometric mean titer; PBMCs, peripheral blood mononuclear cells; PRNT50, plaque reduction neutralization test; SFU, spot forming units



Aşılar ve Klinik Sonuçları

	Total n=444 (%)	Survived n=391 (%)	Fatal n=53 (%)	p
Mean age	59.9 (sd: 18)	57.3 (sd:18)	71.4 (sd:15)	<0.001
Age >65	196 (44)	156 (40)	40 (75)	<0.001
Gender, female	190 (42.8)	166 (42.4)	24 (45.2)	0.696
Mean BMI	27.9 (sd:5.7)	27.7 (sd:5.5)	29.7 (sd:6)	0.022
Comorbidities				
Hypertension	165 (39)	137 (37)	28 (53.8)	0.019
DM	115 (27)	93 (25)	22 (42)	0.009
Malignancy	39 (9.2)	26 (7)	13 (25)	<0.001
Rheumatologic diseases	18 (7.6)	12 (6.1)	6 (14.2)	0.073
Cardiovascular diseases	78 (18.4)	59 (15.8)	19 (36.5)	<0.001
Chronic lung diseases	62 (14.6)	52 (14)	10 (19)	0.315
Chronic renal diseases	34 (8)	23 (6)	11 (21)	<0.001
ICU	80 (18)	31 (7.9)	49 (92.4)	<0.001
Intubated (n=236)		2 (4.5)	42 (95.4)	<0.001
Vaccination status				
No vaccination (n=181)		149 (82.3)	32 (17.6)	0.002
CoronaVac, 2 doses (n=89, %)		79 (88.7)	10 (11.2)	0.813
Biontech, 2 doses (n=52)		52 (100)	0 (0)	0.005
2 Coronavac + 1 biontech (n=32, %)		29 (90.6)	3 (9.3)	0.639
Three doses (n=41, %)		36 (87)	5 (12)	

RESEARCH ARTICLE

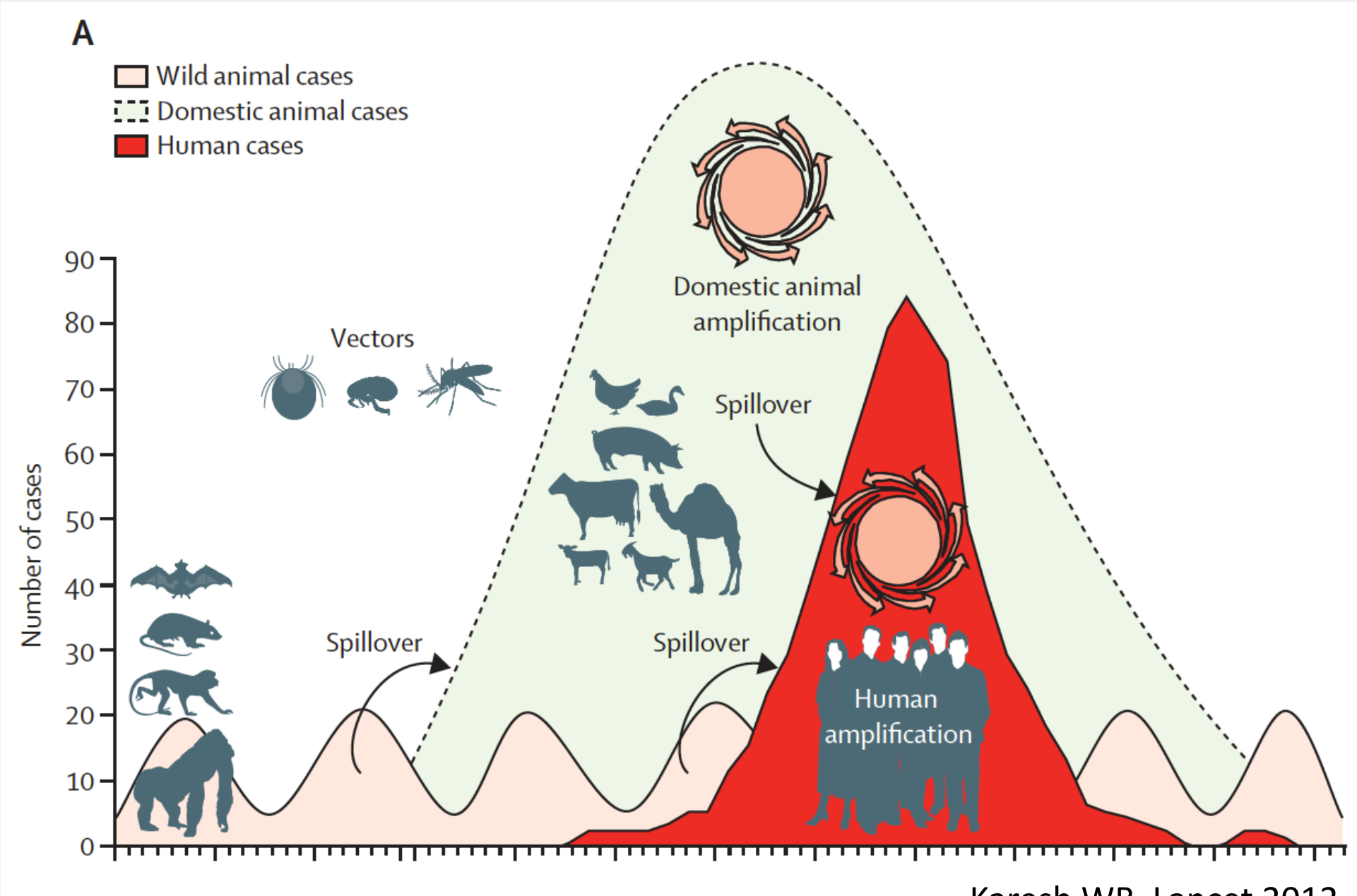
Open Access

Predictors of fatality in pandemic influenza A (H1N1) virus infection among adults

Önder Ergönül^{1*}, Servet Alan², Öznur Ak³, Fatman Sargın⁴, Arzu Kantürk⁵, Alper Gündüz⁶, Derya Engin⁷, Oral Öncül⁸, İlker İnanc Balkan⁹, Bahadır Ceylan¹⁰, Nur Benzonana³, Saadet Yazıcı⁴, Funda Şimşek⁵, Nuray Uzun⁶, Asuman İnan⁷, Eren Gulhan¹⁰, Meral Ciblak¹¹, Kenan Midilli¹², Mustafa Ozyurt¹³, Selim Badur¹¹, Serap Gencer¹⁴, Özcan Nazlıcan², Serdar Özer³, Nail Özgüneş⁴, Taner Yıldırım⁵, Turan Aslan¹⁵, Pasa Gökteş⁷, Nese Saltoğlu⁹, Muzaffer Fincancı¹⁰, Ali İhsan Dokucu¹⁴, Haluk Eraksoy¹⁶ and Turkish Society of Clinical Microbiology and Infectious Diseases (KLİMİK), Pandemic Influenza Study Group

Table 3 Univariate and multivariate analyses for the predictors of the fatality

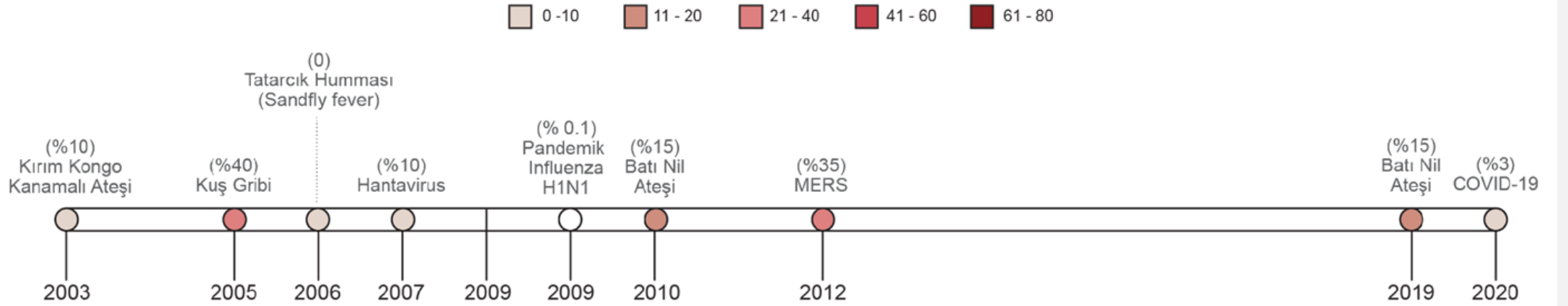
	Univariate analysis			Multivariate analysis		
	Odds ratio	Confidence interval	p	Odds ratio	Confidence interval	P
Using neuraminidase inhibitors within two days after onset of symptoms	0.33	0.14-0.79	0.13	0.17	0.03-0.77	0.022
Nosocomial infection	10	4.9-23.2	<0.001	5.7	1.84-18	0.013
Presence of malignancy	4.5	1.6-12.4	0.003	3.8	0.66-22.01	0.133

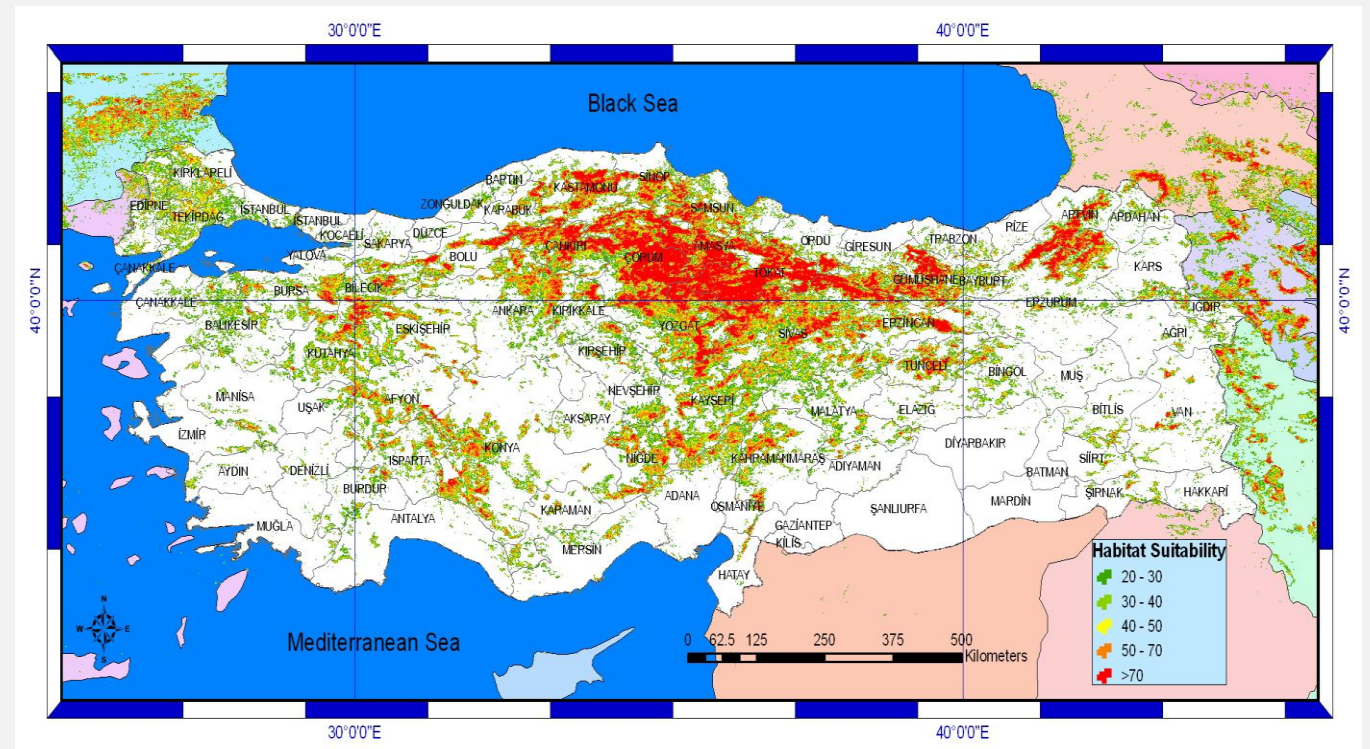
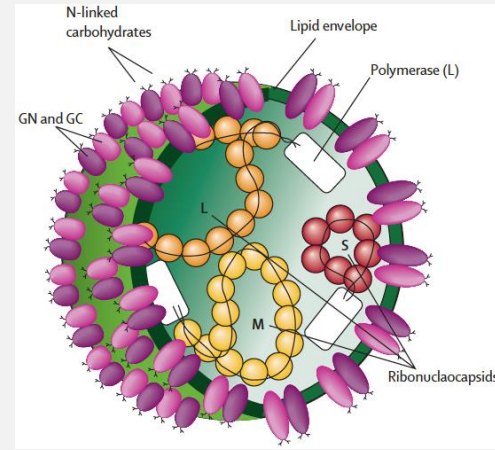
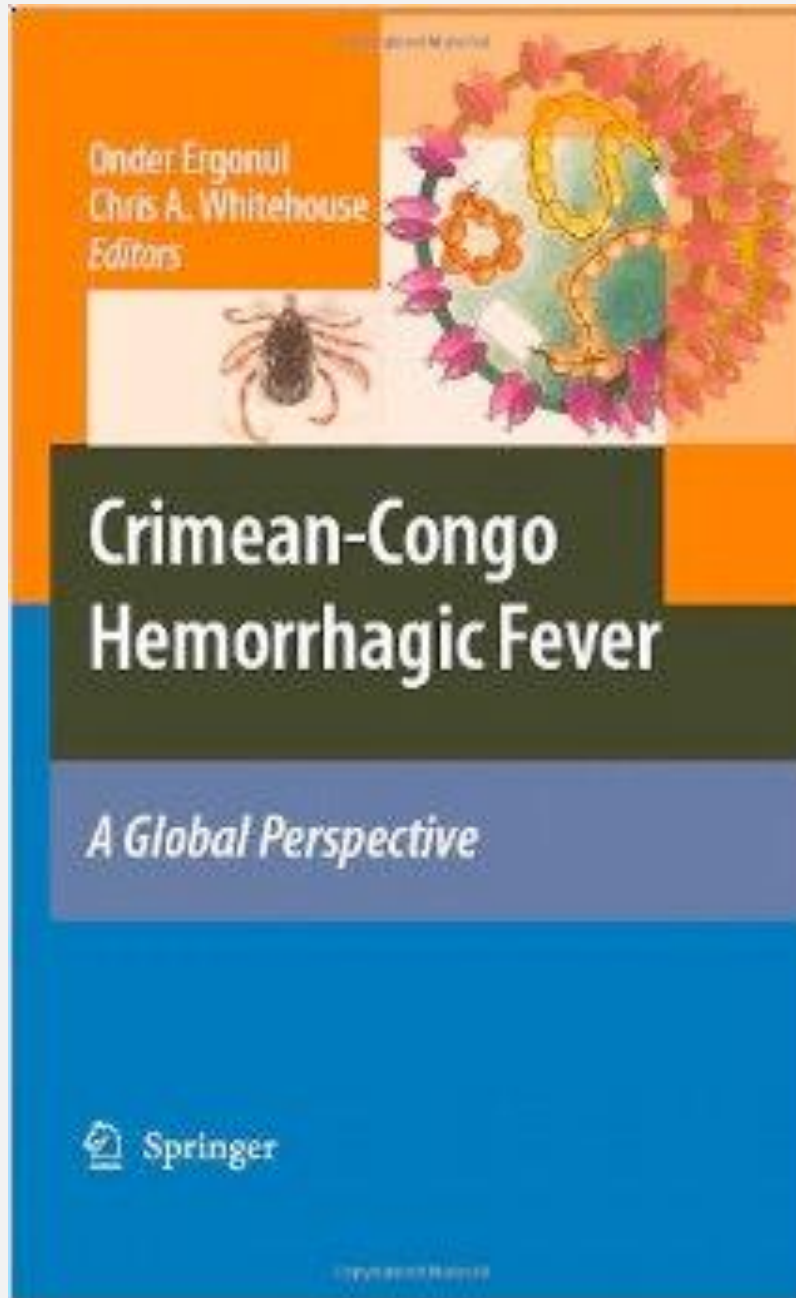


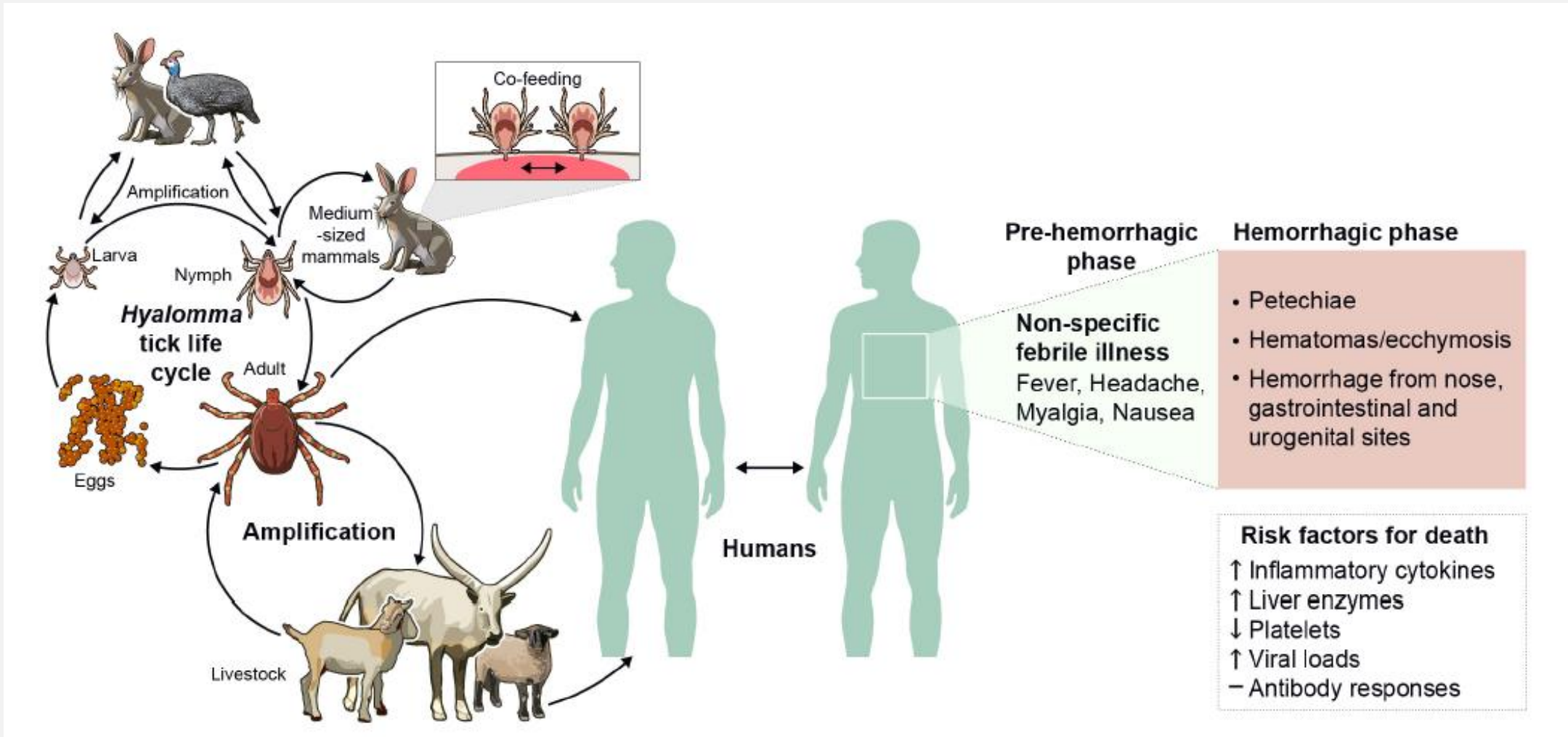


Yeni Enfeksiyonlar ve Ölüm Oranları

TÜRKİYE'DE TEHDİT OLUŞTURAN VİRÜSLER







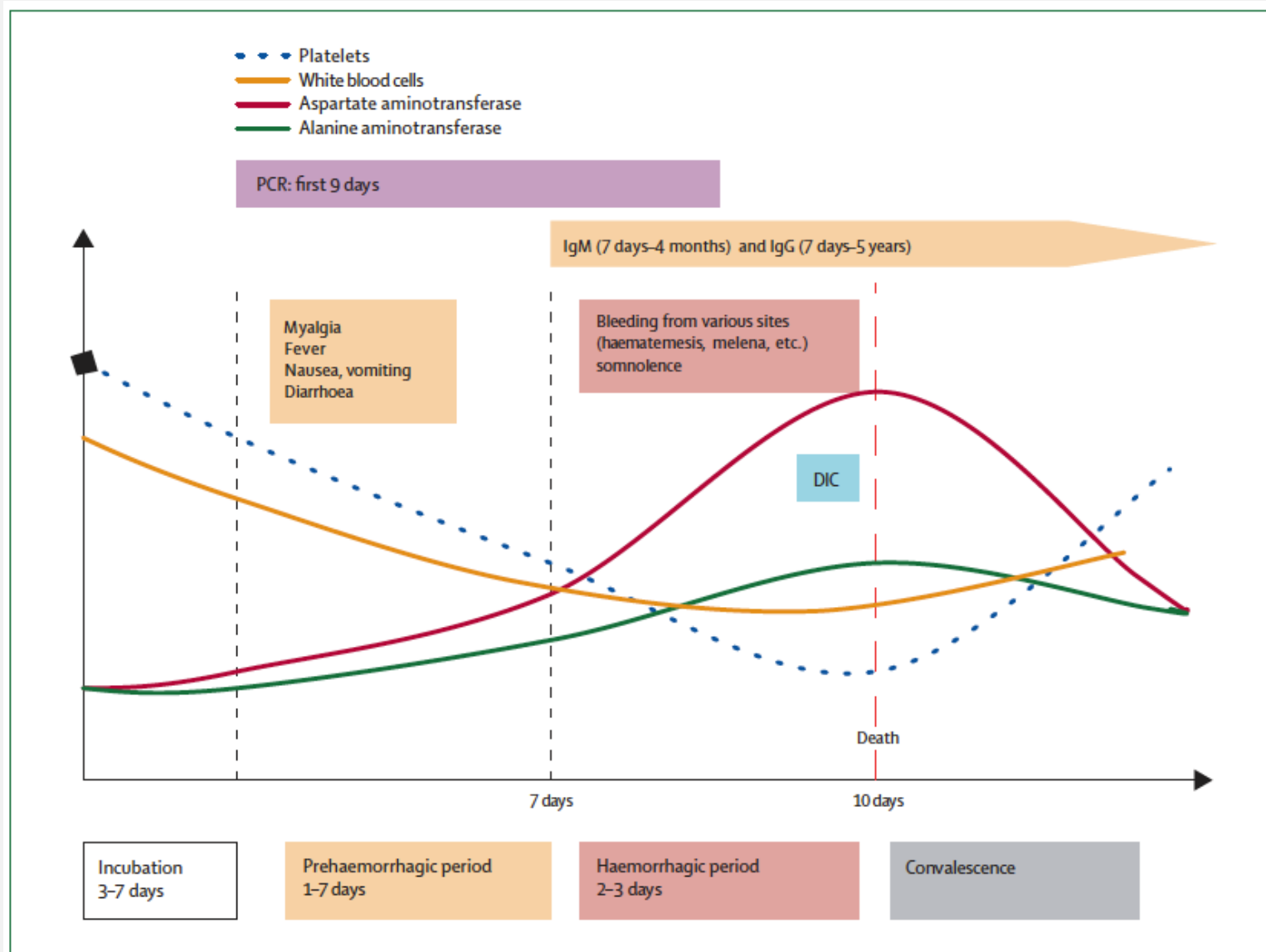
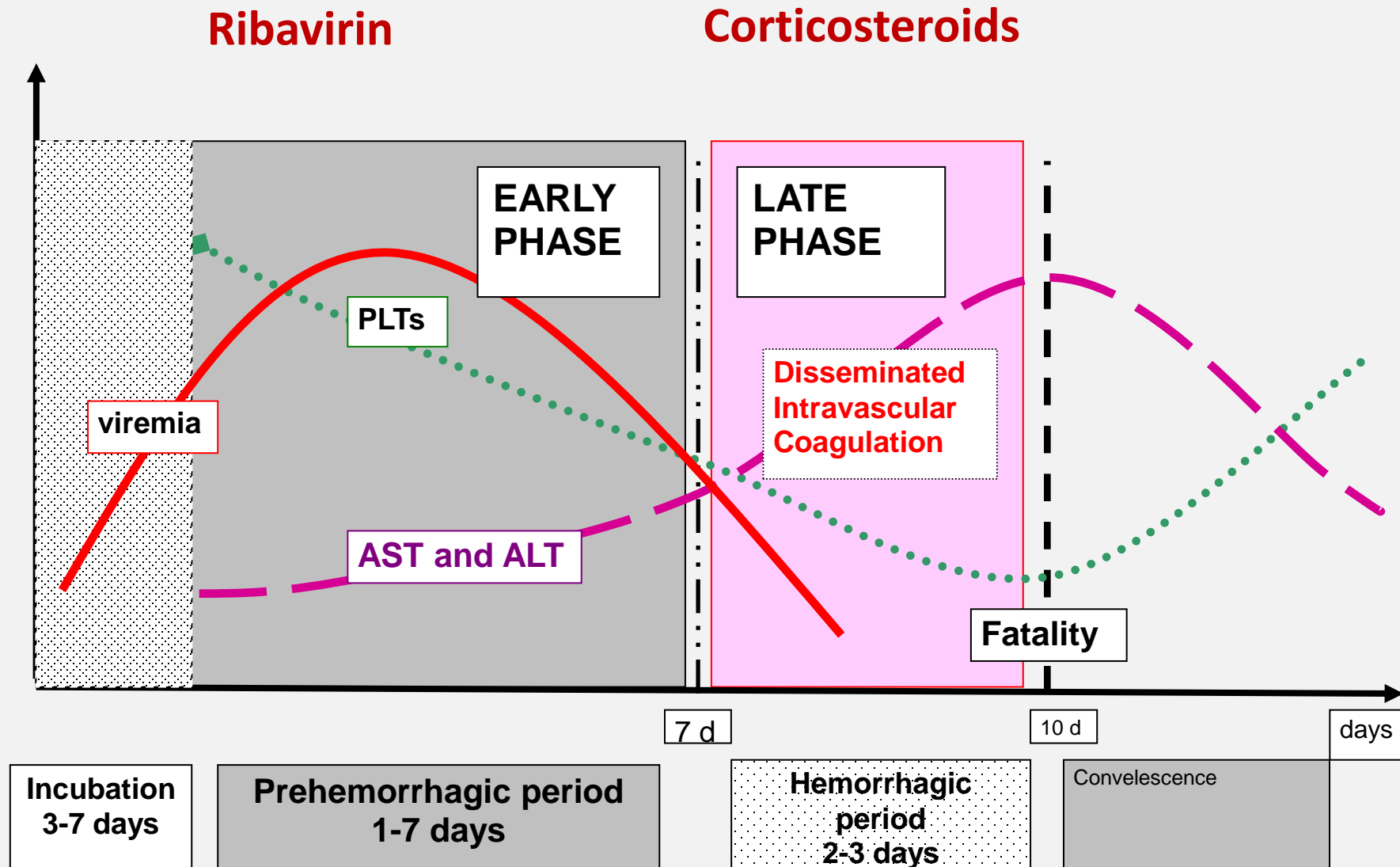
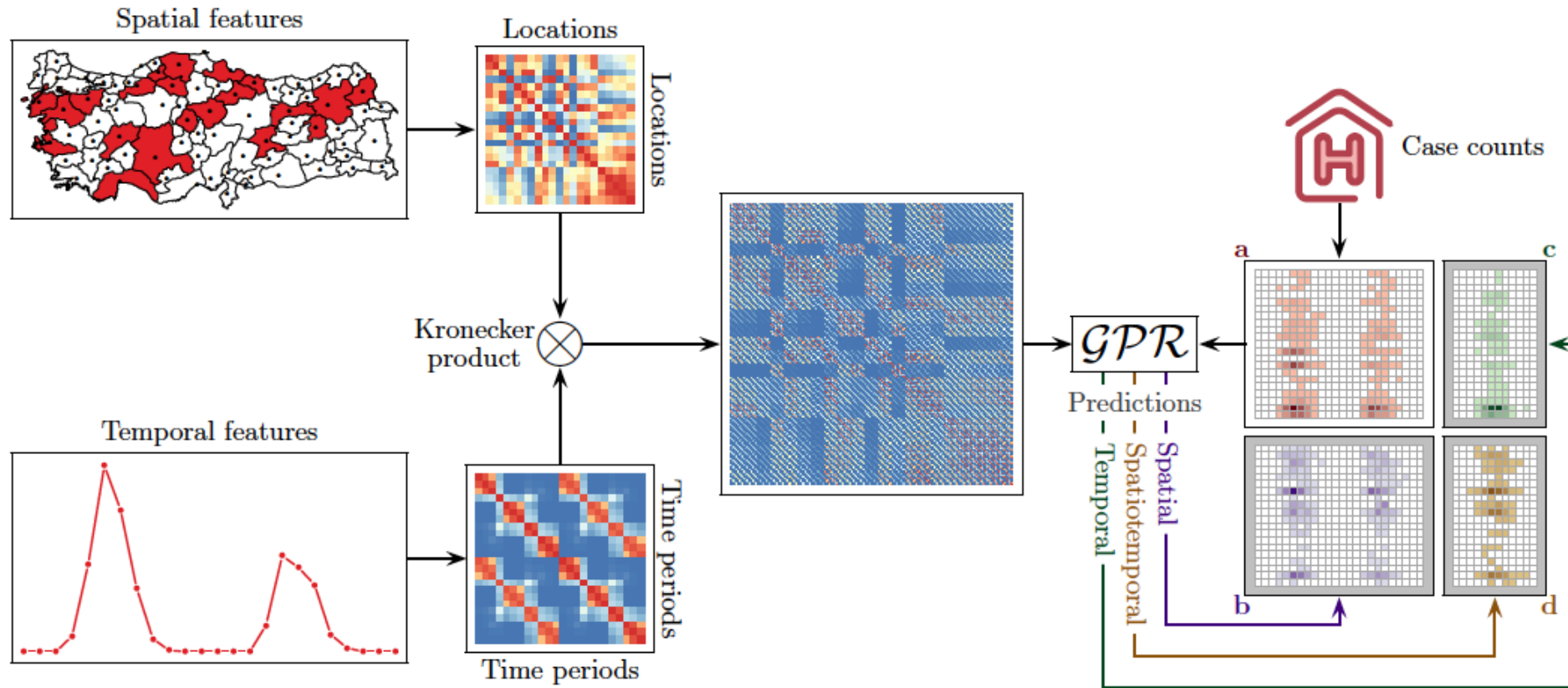


Figure 3: Clinical and laboratory course of CCHF
DIC=disseminated intravascular coagulation.



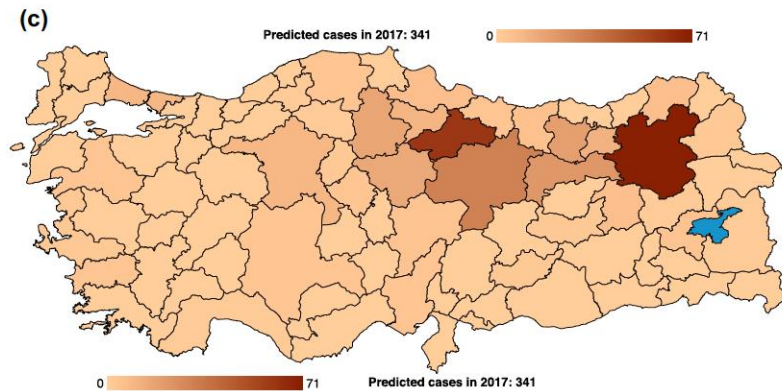
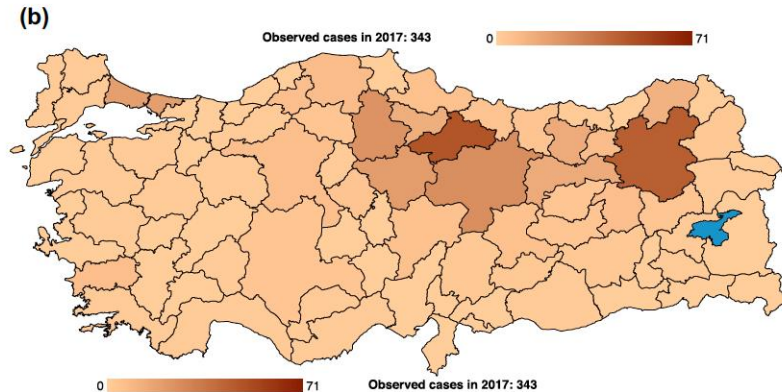
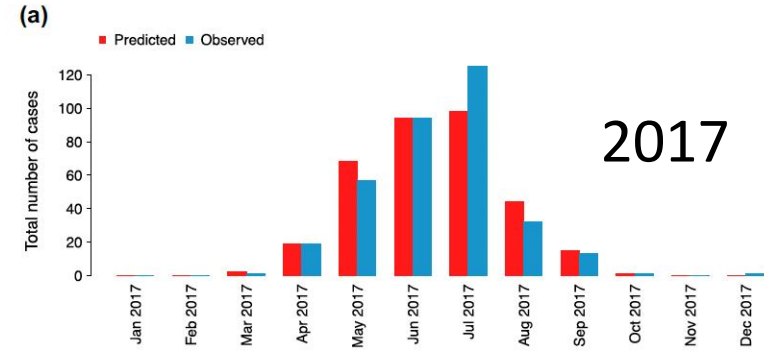
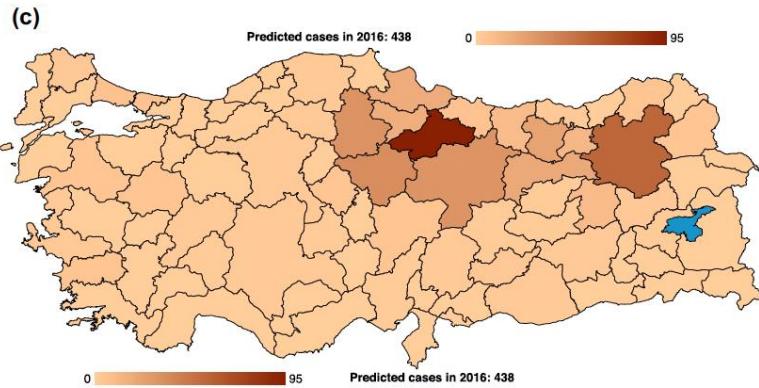
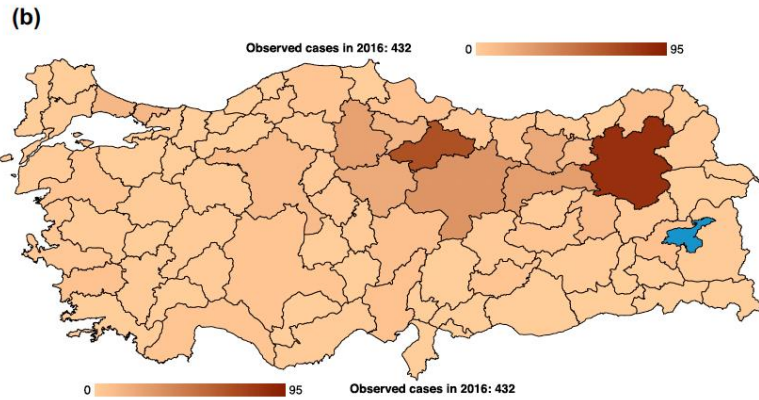
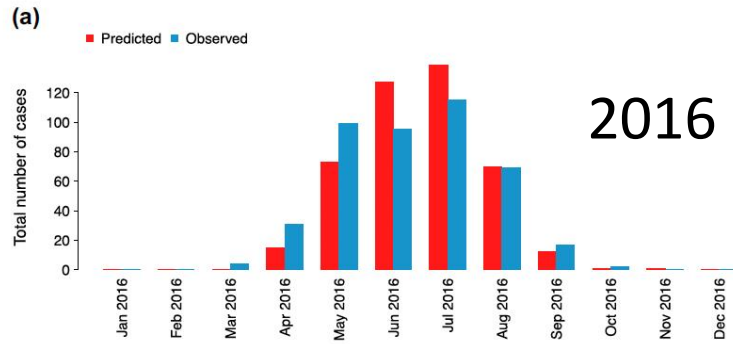
Ergonul O. Treatment of CCHF, Antivir Res 2008

Tahmin Modellerimiz





Prospective Prediction Tool for Turkey

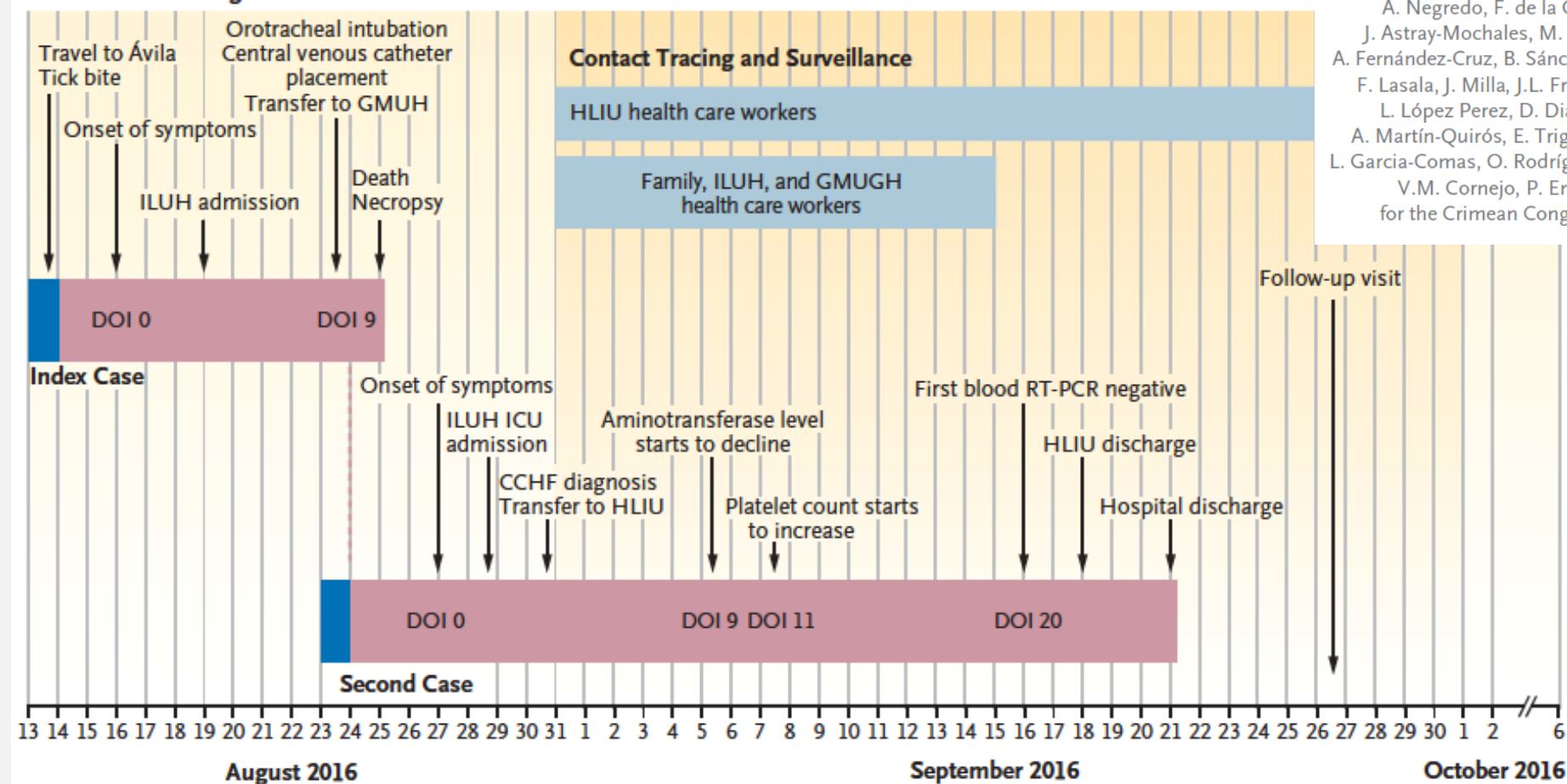




Autochthonous Crimean–Congo Hemorrhagic Fever in Spain

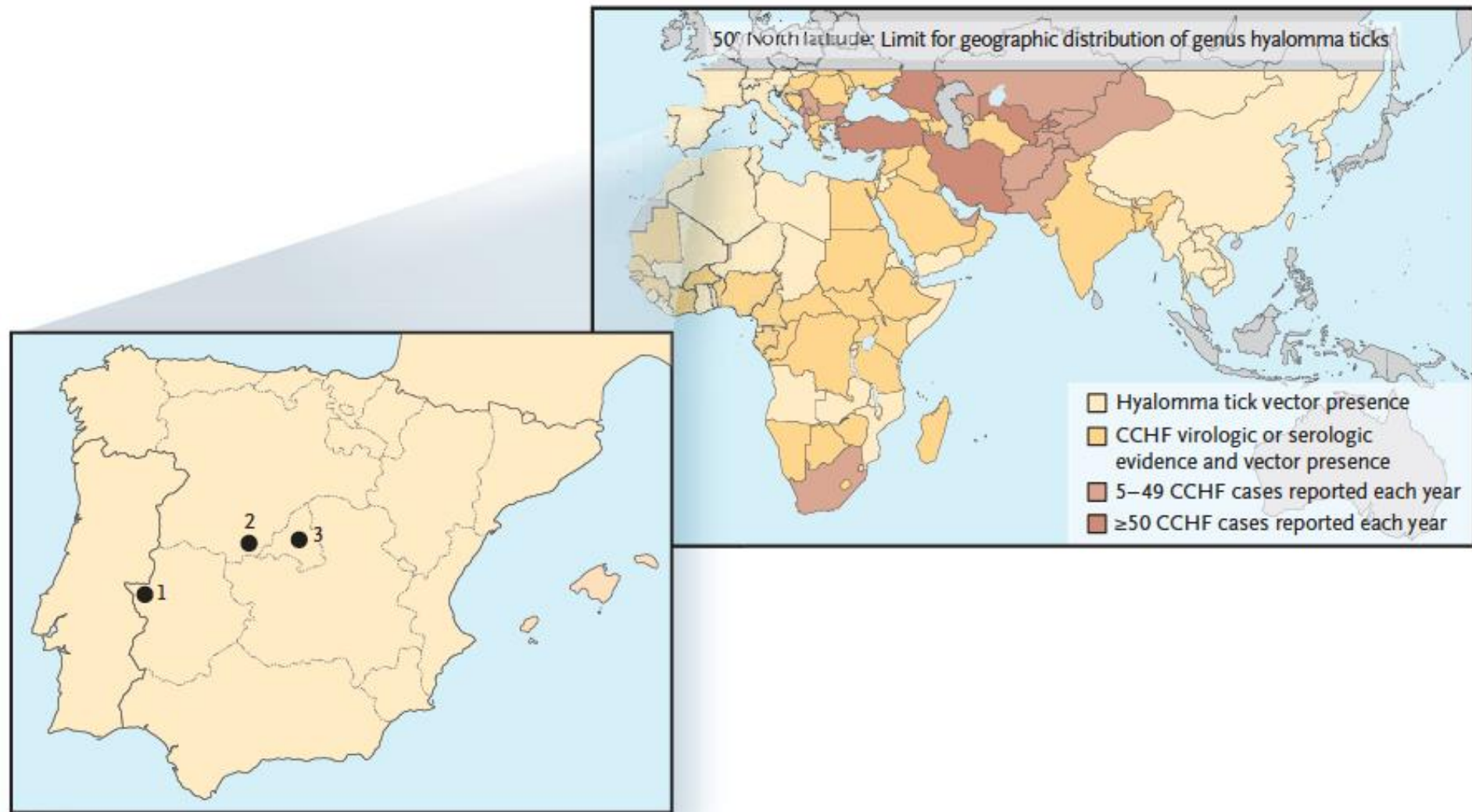
A. Negredo, F. de la Calle-Prieto, E. Palencia-Herrejón, M. Mora-Rillo, J. Astray-Mochales, M. P. Sánchez-Seco, E. Bermejo Lopez, J. Menárguez, A. Fernández-Cruz, B. Sánchez-Artola, E. Keough-Delgado, E. Ramírez de Arellano, F. Lasala, J. Milla, J.L. Fraile, M. Ordoñas Gavín, A. Martínez de la Gándara, L. López Perez, D. Diaz-Diaz, M.A. López-García, P. Delgado-Jimenez, A. Martín-Quirós, E. Trigo, J.C. Figueira, J. Manzanares, E. Rodríguez-Baena, L. Garcia-Comas, O. Rodríguez-Fraga, N. García-Arenzana, M.V. Fernández-Díaz, V.M. Cornejo, P. Emmerich, J. Schmidt-Chanasit, and J.R. Arribas, for the Crimean Congo Hemorrhagic Fever@Madrid Working Group*

A Timeline Involving Patients and Contacts



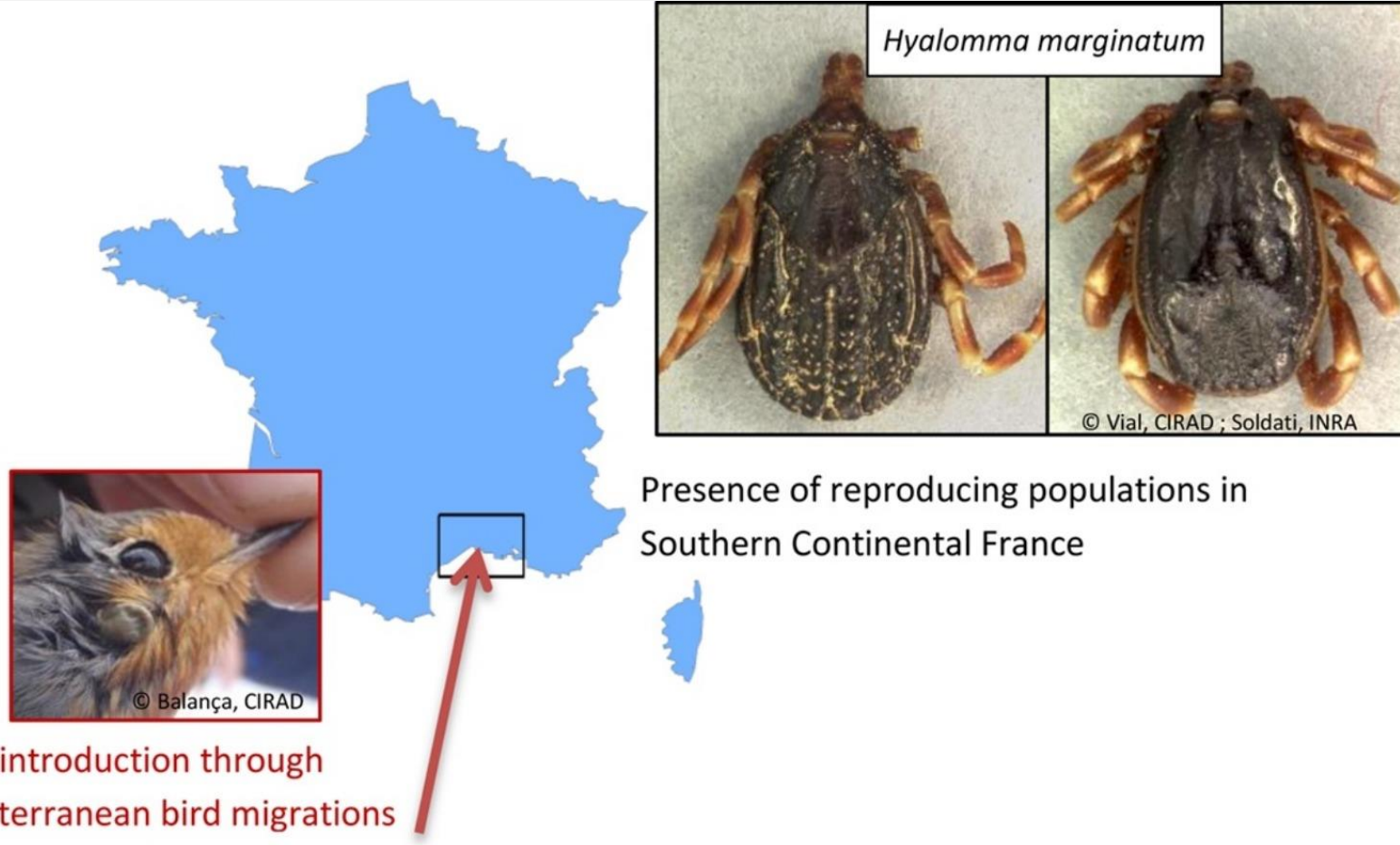


B Locations of CCHF Worldwide





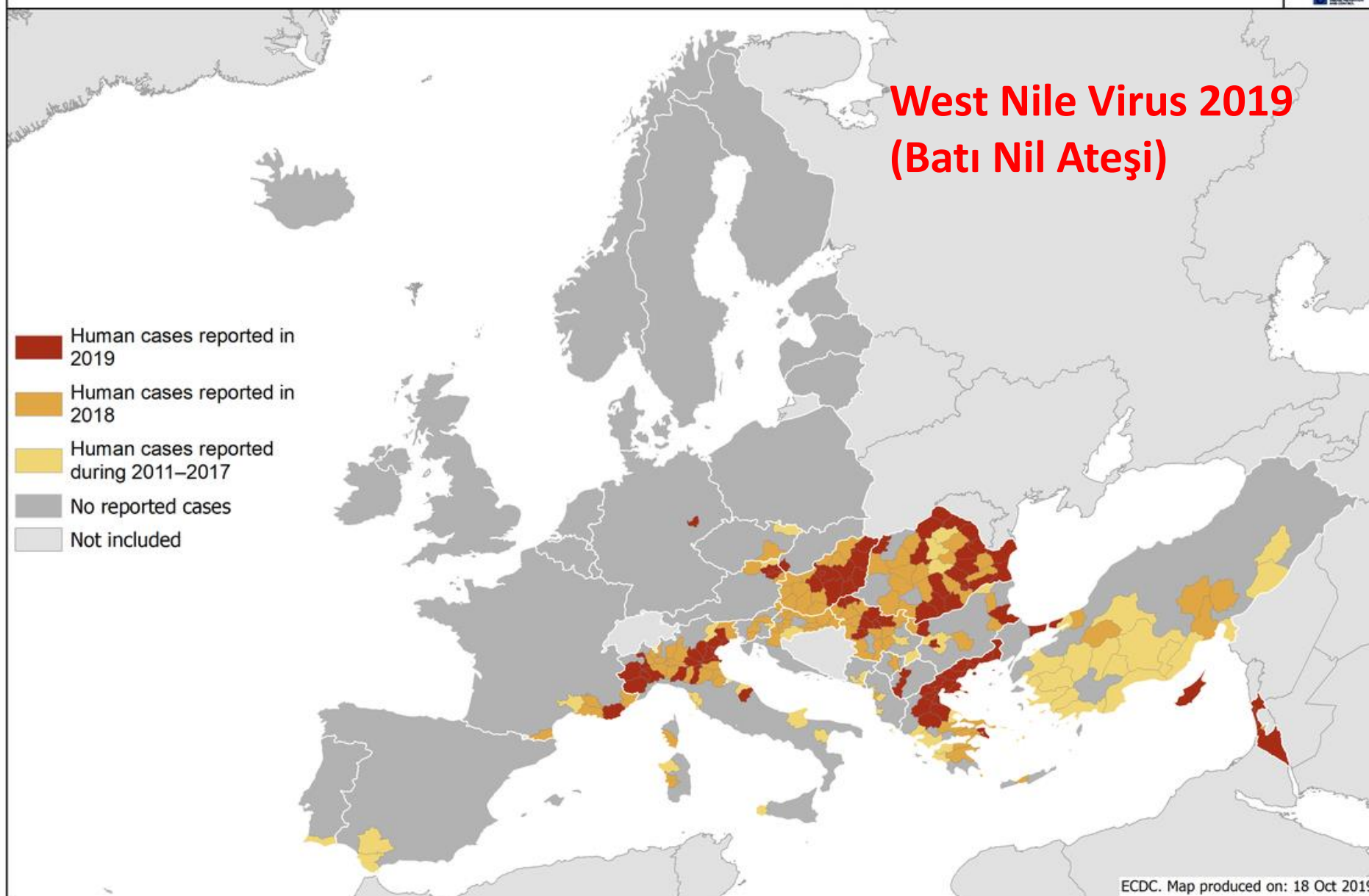
Strong evidence for the presence of the tick *Hyalomma marginatum* Koch, in southern France



Vial L, TTBD, 2016



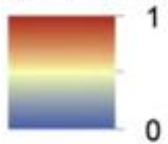
Figure 2: Blood-feeding female *Aedes albopictus* mosquito



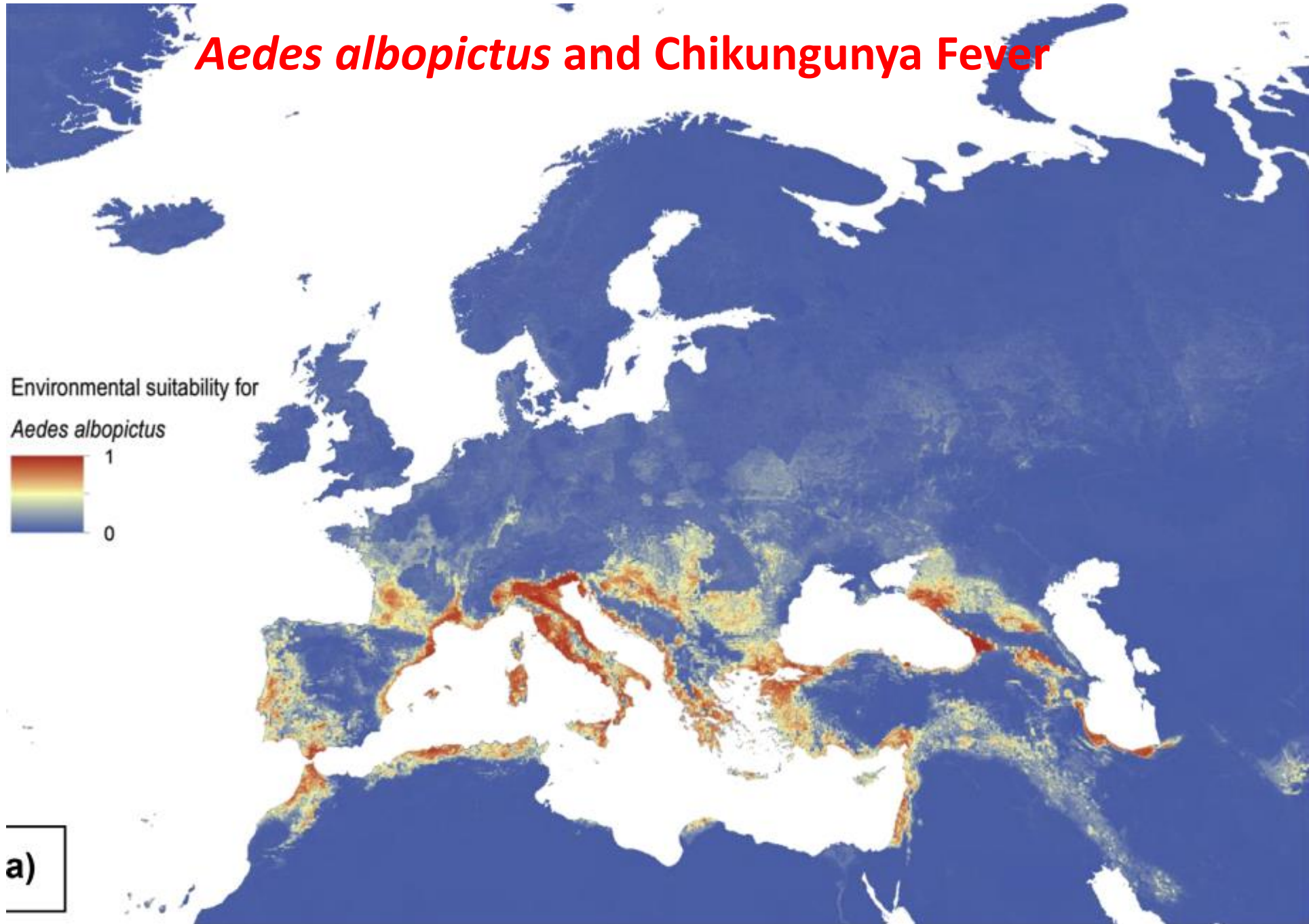
Aedes albopictus and Chikungunya Fever

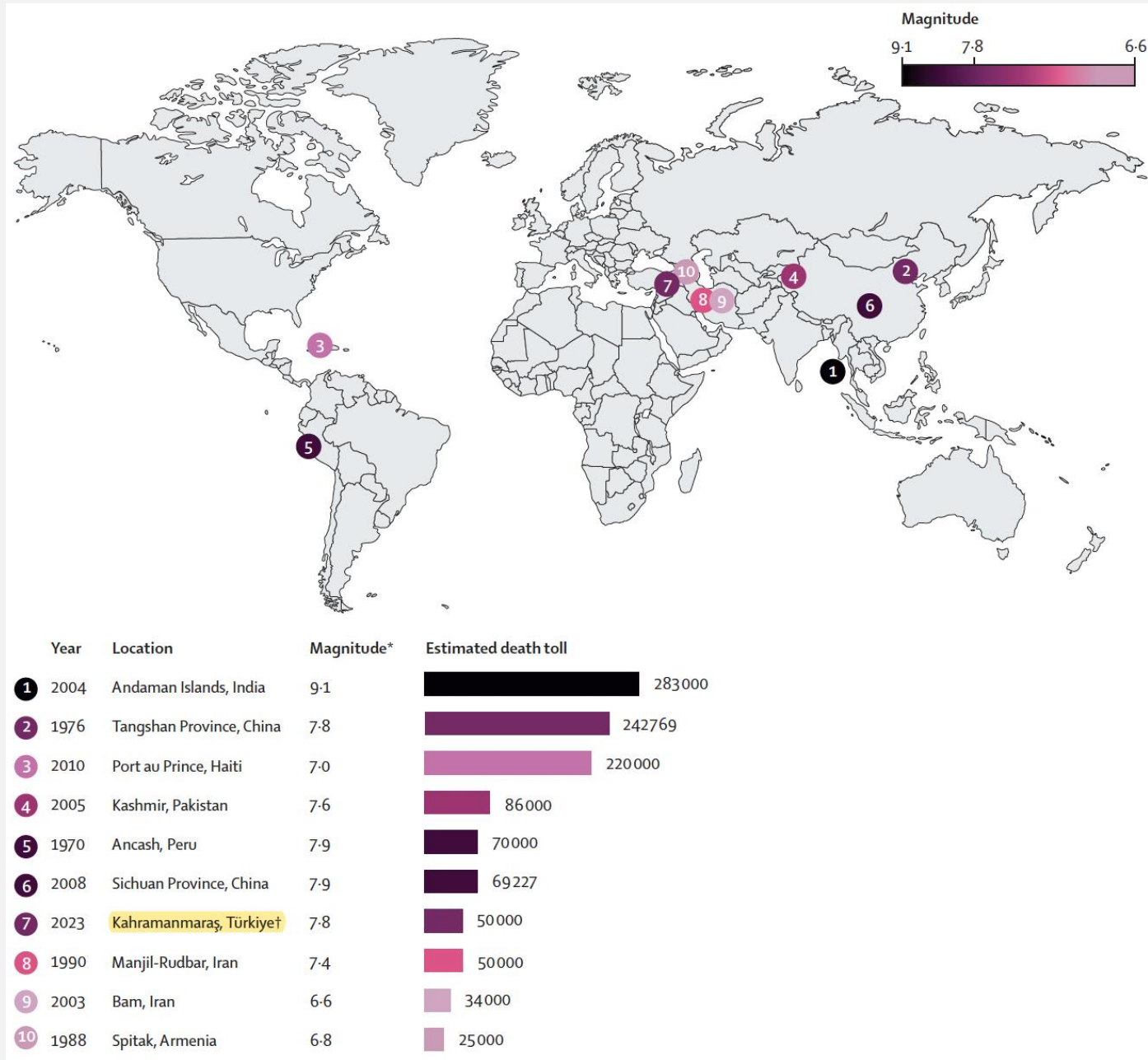
Environmental suitability for

Aedes albopictus

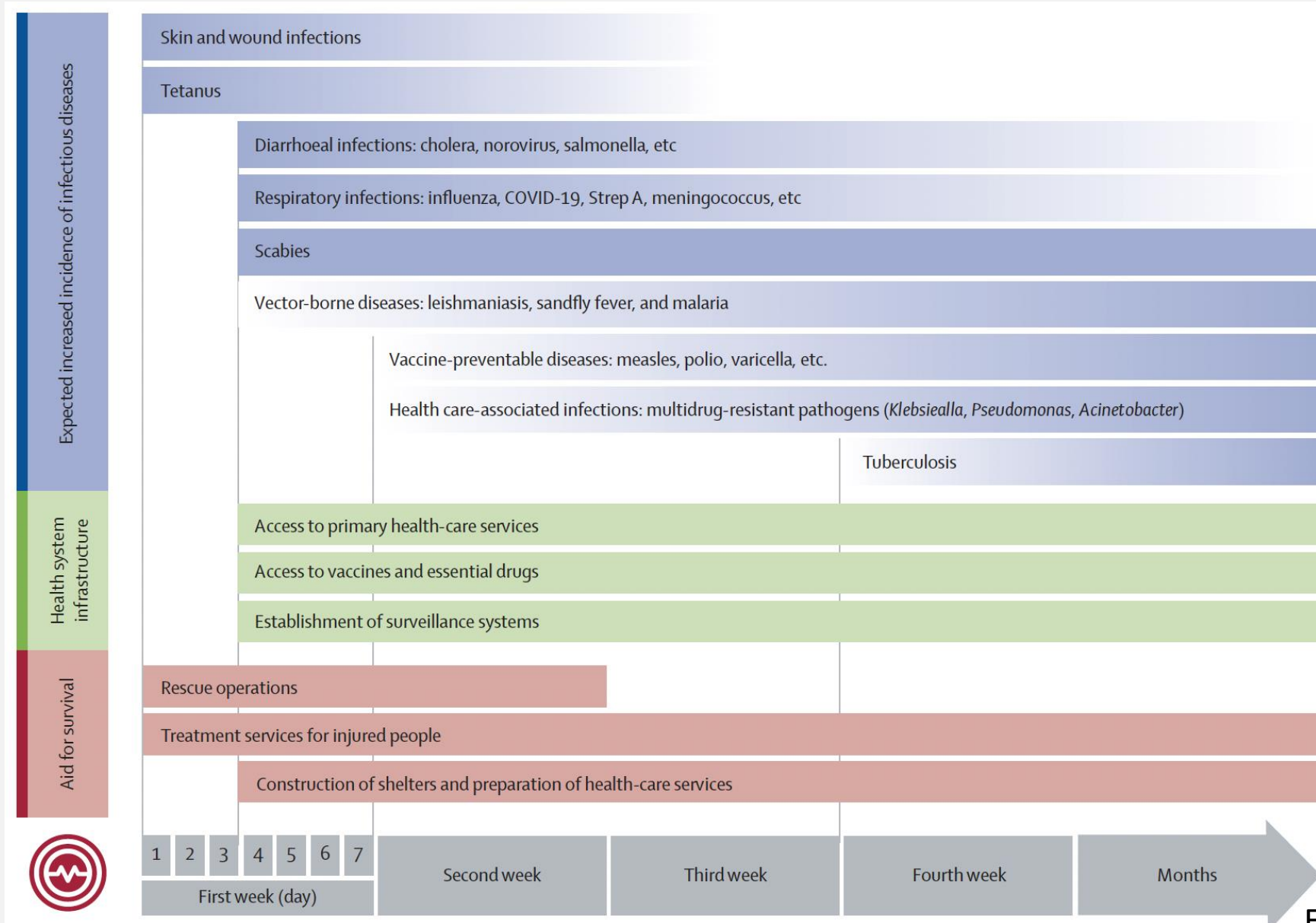


a)





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Situation in the region before the earthquakes		Comment
Gastrointestinal infections		
Cholera	An 2022 outbreak that started in Syria and resulted in >100 000 suspected cases, with 30% of infections in İdlib near the Turkish border ⁴²	The outbreak should be carefully monitored because of the poor sanitation conditions in Syria and Türkiye
Hepatitis A	Not reported in the earthquake-affected region of Türkiye, but 1354 cases reported among refugees in temporary shelters from 2012 –2016 ²⁹	Outbreak expected among unvaccinated population
Respiratory infections		
Measles	The vaccination rate was 90–92%, ¹¹ and measles incidence between March, 2022, and February, 2023, was 5.46 per million, ²⁴ which is the third highest rate in the WHO European region	Outbreak expected because of measles' high incidence in Türkiye ²⁴ and interrupted vaccination services
Rubella	The incidence between March, 2022, and February, 2023, was reported to be the second highest in the WHO European region ²⁴	Outbreak expected because of rubella's high incidence in Türkiye ²⁴ and interrupted vaccination services
Tuberculosis	Incidence of tuberculosis was reported as 18 cases per 100 000 people in Türkiye in 2021 ²⁹	Because of overcrowding and disrupted health-care services, monitoring and control of tuberculosis is a challenge
Vector-borne infections		
Scabies	Reported ²⁷	Preventive treatment should be implemented
Malaria	Some provinces in the earthquake area are the old malaria region (southeastern provinces of Türkiye), and there are reported cases ^{29,30}	Emerging cases expected in the summer
Leishmaniasis	Cutaneous leishmaniasis was reported in the region ³¹	Outbreak expected in warmer season
Sandfly fever	The vector (sandflies) is present and infections were reported ³⁴	Outbreak expected in warmer season
West Nile fever	West Nile fever seropositivity was detected in Mardin area in 52 (17%) of 307 tested individuals ³²	Outbreak expected in warmer season
Hospital-associated infections	Multidrug-resistant Gram-negative bacteria such as <i>Acinetobacter</i> spp and carbapenem-resistant <i>Klebsiella</i> spp are the leading challenges in the hospitals in Türkiye ³⁵	Stringent infection control measures should be implemented

Table: Evaluation of the potential outbreaks in the Türkiye earthquake region

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Çalışma Alanlarımız



Virüsler

- Bulaşma dinamikleri
- Tanı testleri
- İlaç çalışmaları



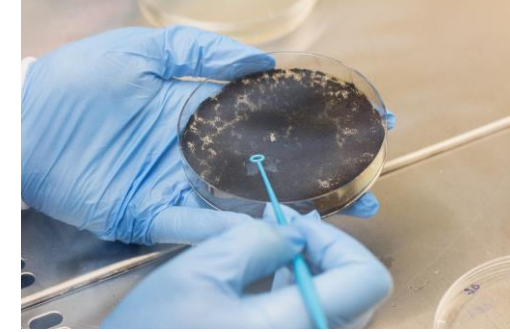
Bakteriler ve Antibiyotik Direnci

- Direnç epidemiyolojisi
- Antimikrobiyal yönetim
- Biyofilmler
- Bakterilerin hastalık mekanizmaları



Bağışıklık Yanıtı

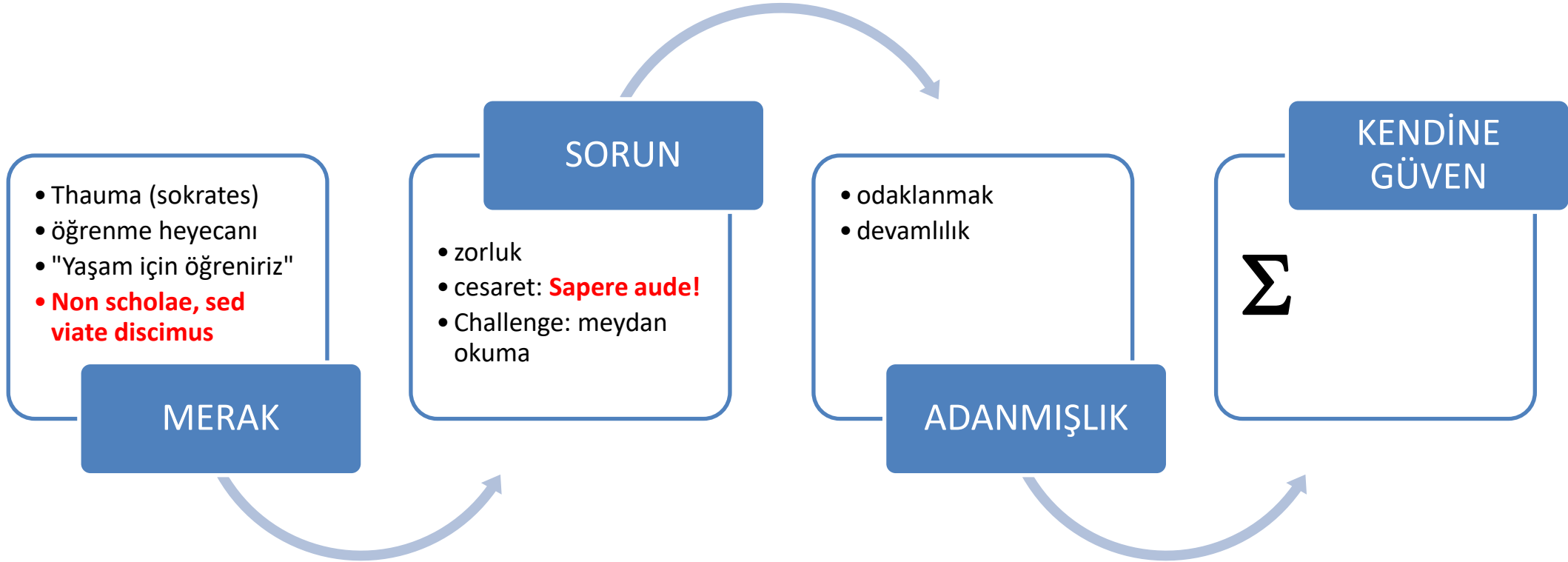
- Virüslere karşı nötralizan antikor yanıtı
- Virüslere karşı T hücre yanıtı
- Bakterilere karşı nötrofil yanıtı



Mantarlar

- Mantarlarda ilaç girenci
- Mantarların hastalık yapabilme özellikleri



Nasıl Yaparsak Başarırız?








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